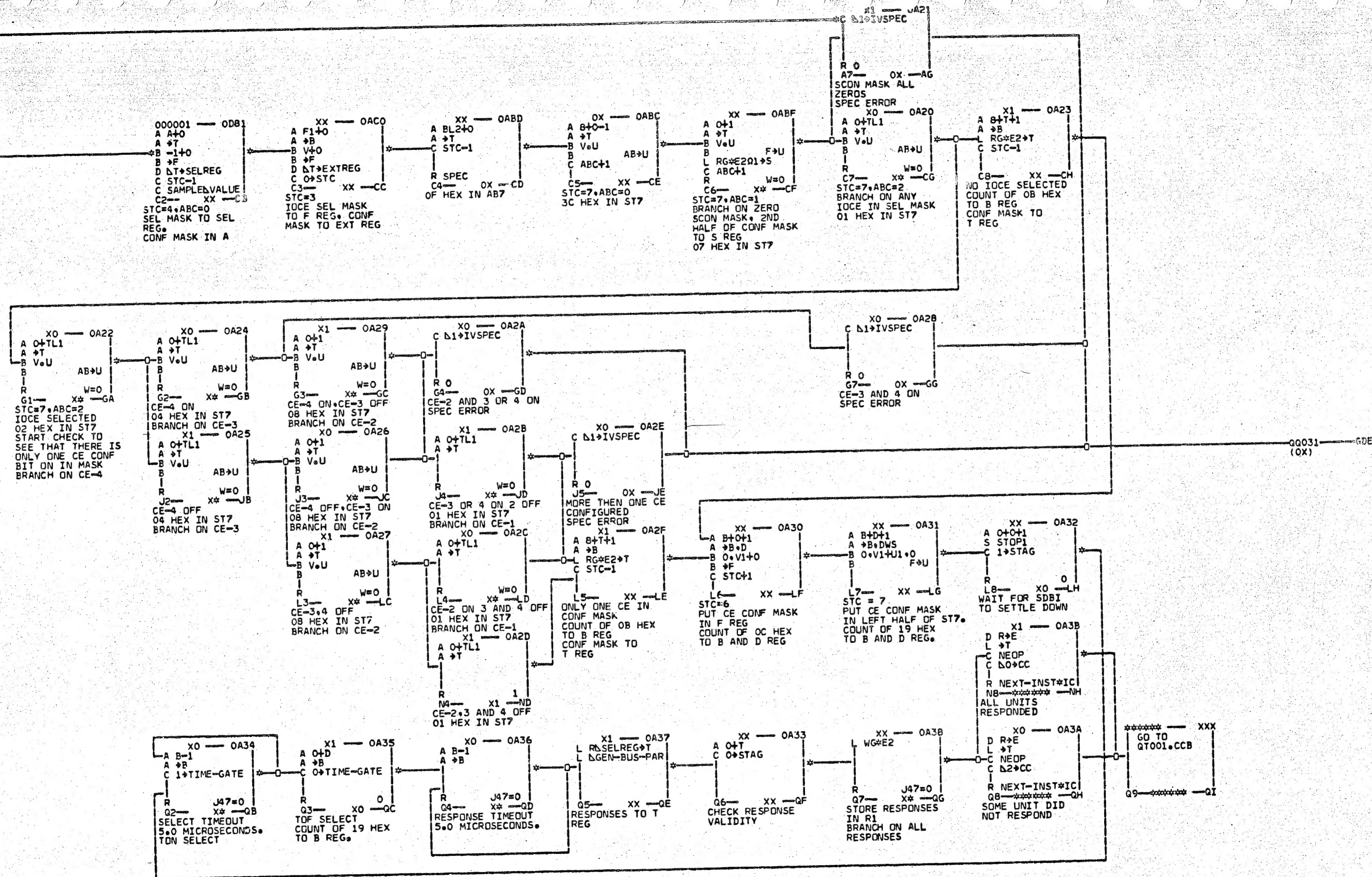
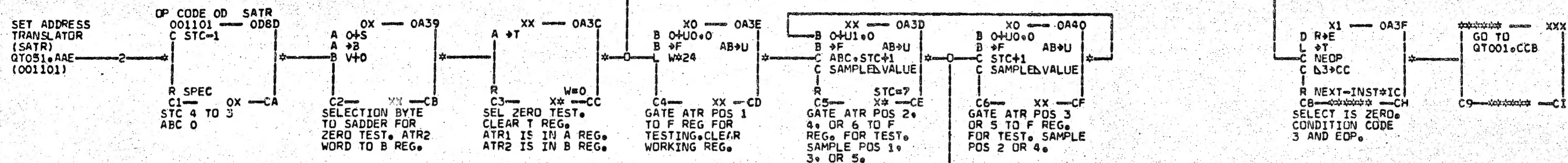


1171.0GE  
(1)

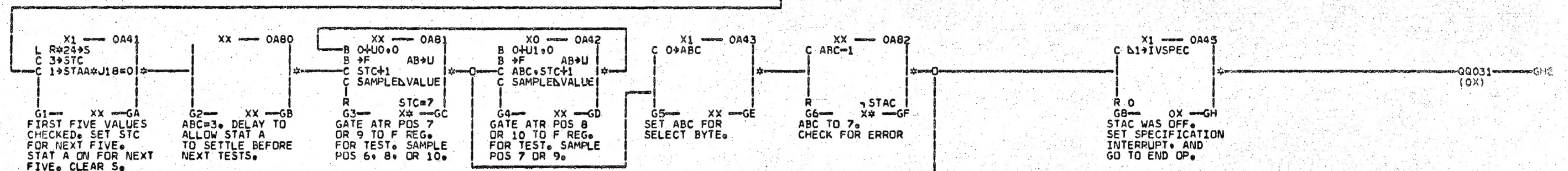
ET CONFIGURATION  
REGISTER  
SCON  
TO S1.AAE  
0000011



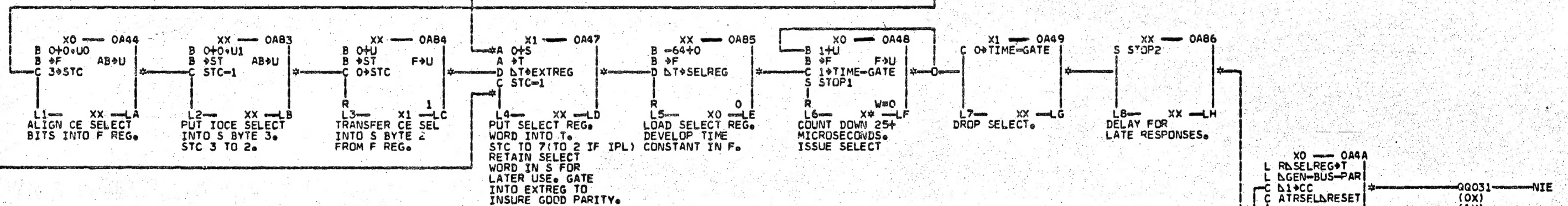




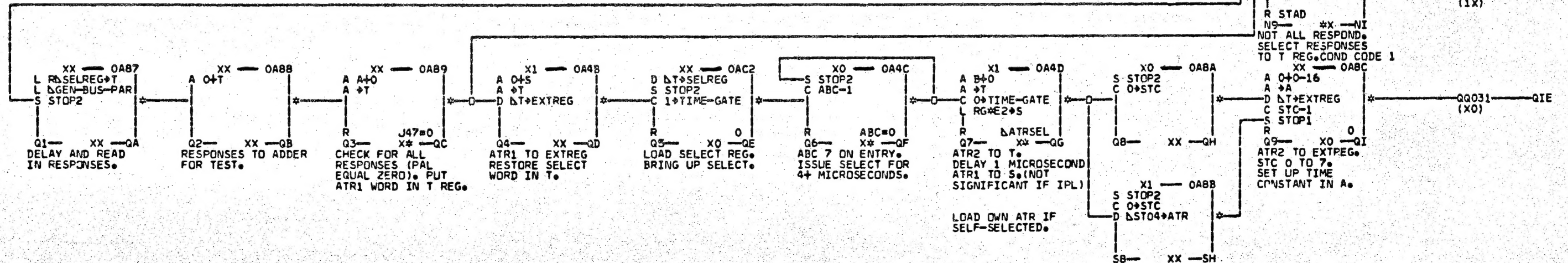
NOTE: ATR1 WORD IS IN A+B.D REGS.  
ATR2 WORD IS IN S.T REGS.  
AT START OF INSTRUCTION.



Q0031.AFE (X1) RETRY IPL SELECT.



QY061.CIE (X1)



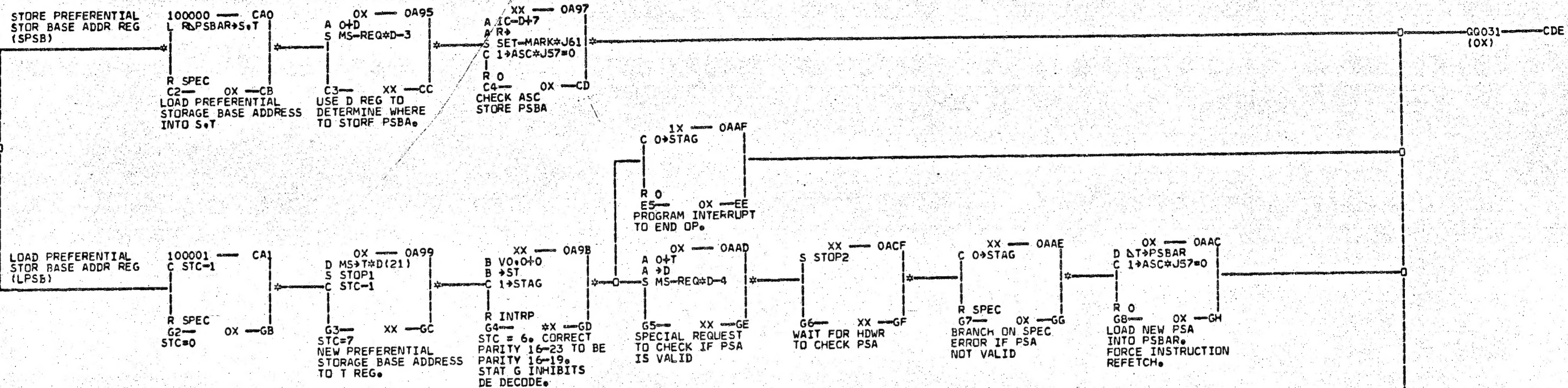
12030



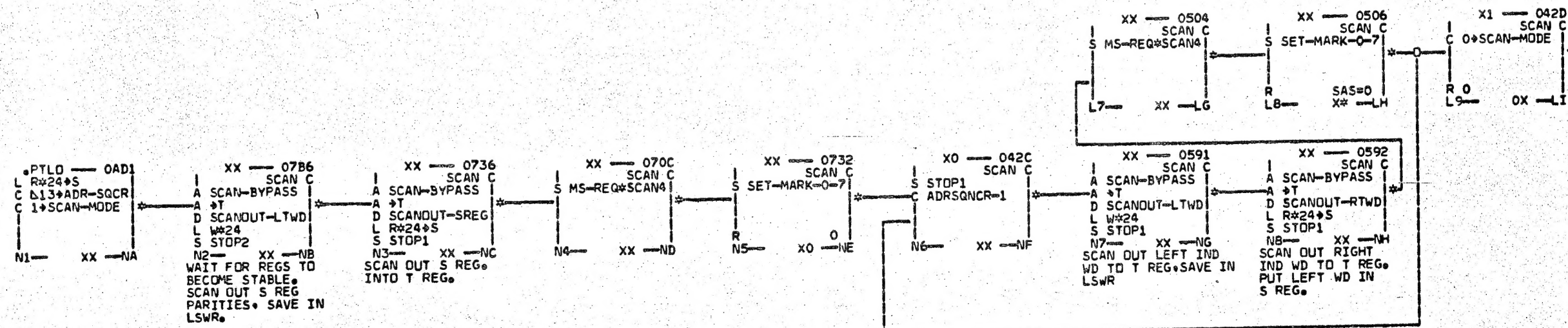




SPSB-LPSB  
Q1005.CAE  
(100000)  
(100001)



PARTIAL LOGOUT  
DIAGNOSE KERNEL  
ENTRY IS FROM  
DIAGNOSE INST.  
Q0171.CH





MOVE  
WORD  
(MVW)  
Q031.EAE  
(011000)

MOVE WORD OP CODE DB

011000 E98  
A 12+12  
A 12+12  
D 12+12  
L R#24+5

C1 XX CA  
NEXT INSTR ADDR  
INTO S TO SAVE.  
4 TO T (OVERLAP  
TEST CONSTANT)

XX OAB6  
A 0+S  
A 12+12  
D IC+ABC  
S MS-REQ#IC-4

C2 XX CB  
SAVE NEXT INSTR  
ADDR. IN K.  
REQUEST SOURCE  
OPERAND.

XX OAB7  
A IC+0+8  
A 12+12  
S STOP1  
C ABC,STC=1

C3 XX CC  
WAIT ONE CYCLE  
UPDATE SOURCE ADDR  
TO NEXT DOUBLE  
WORD. ABC AND  
STC SET FOR WORD  
BOUNDARY TEST.

XX OAB9  
A IC-D  
A 12+12  
C 12+12  
OVERLAP TEST.  
RESULT TO B.

C4 XX CD  
OVERLAP TEST.  
RESULT TO B.

XX OABB  
A B-T  
D MS+ST  
L W#24  
C 12+12  
SUBTRACT 4  
FOR SINGLE  
OVERLAP TEST.  
STAT A ON FOR  
ONE WORD OVERLAP.  
FIRST OPND TO S.T.  
SAVE RIGHT SOURCE  
OPND IN WKG. REG.

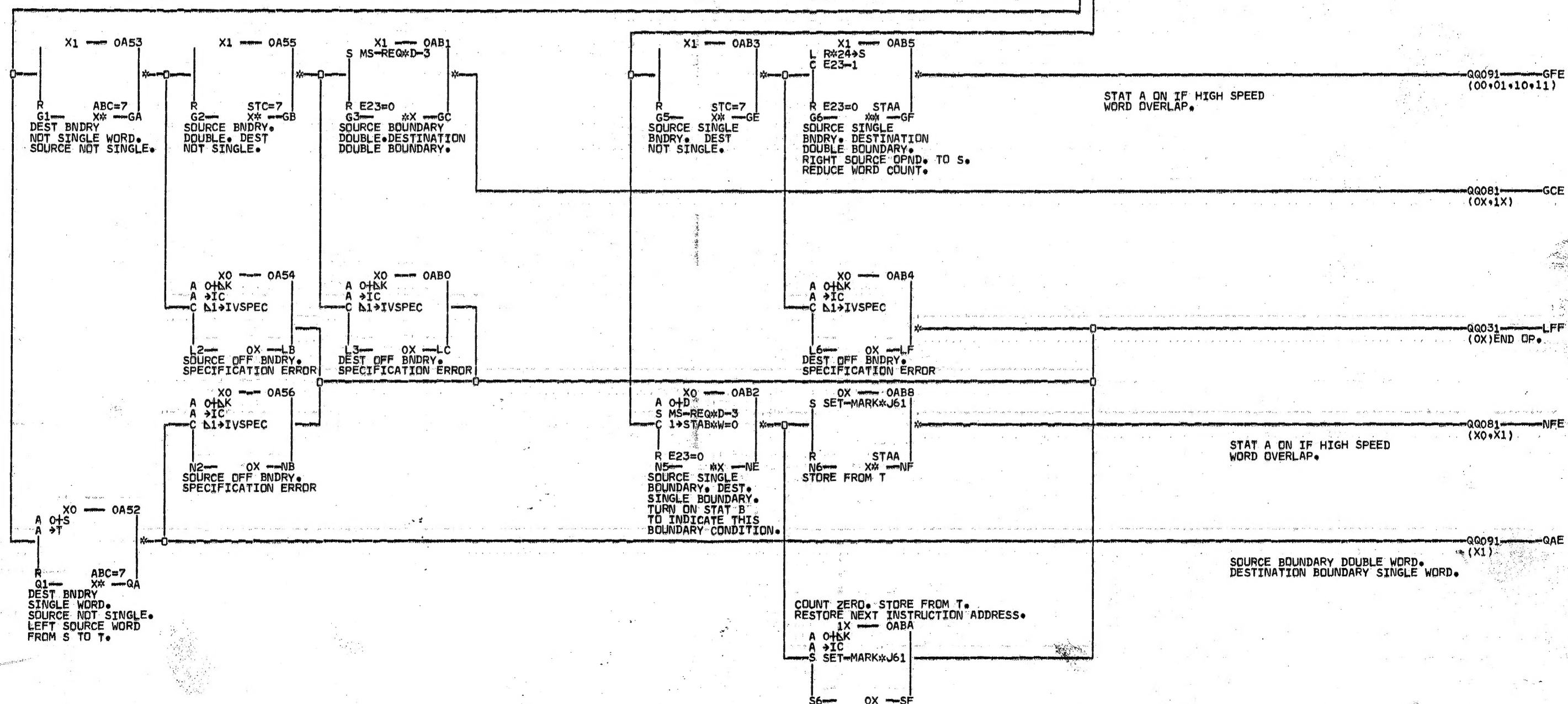
X1 OA4F  
C 12+12  
R A6  
ABC#3  
X# AF  
STAT A ON FOR  
DOUBLE WORD  
OVERLAP.  
X0 OA4E

R ABC#3  
X# CF  
C6

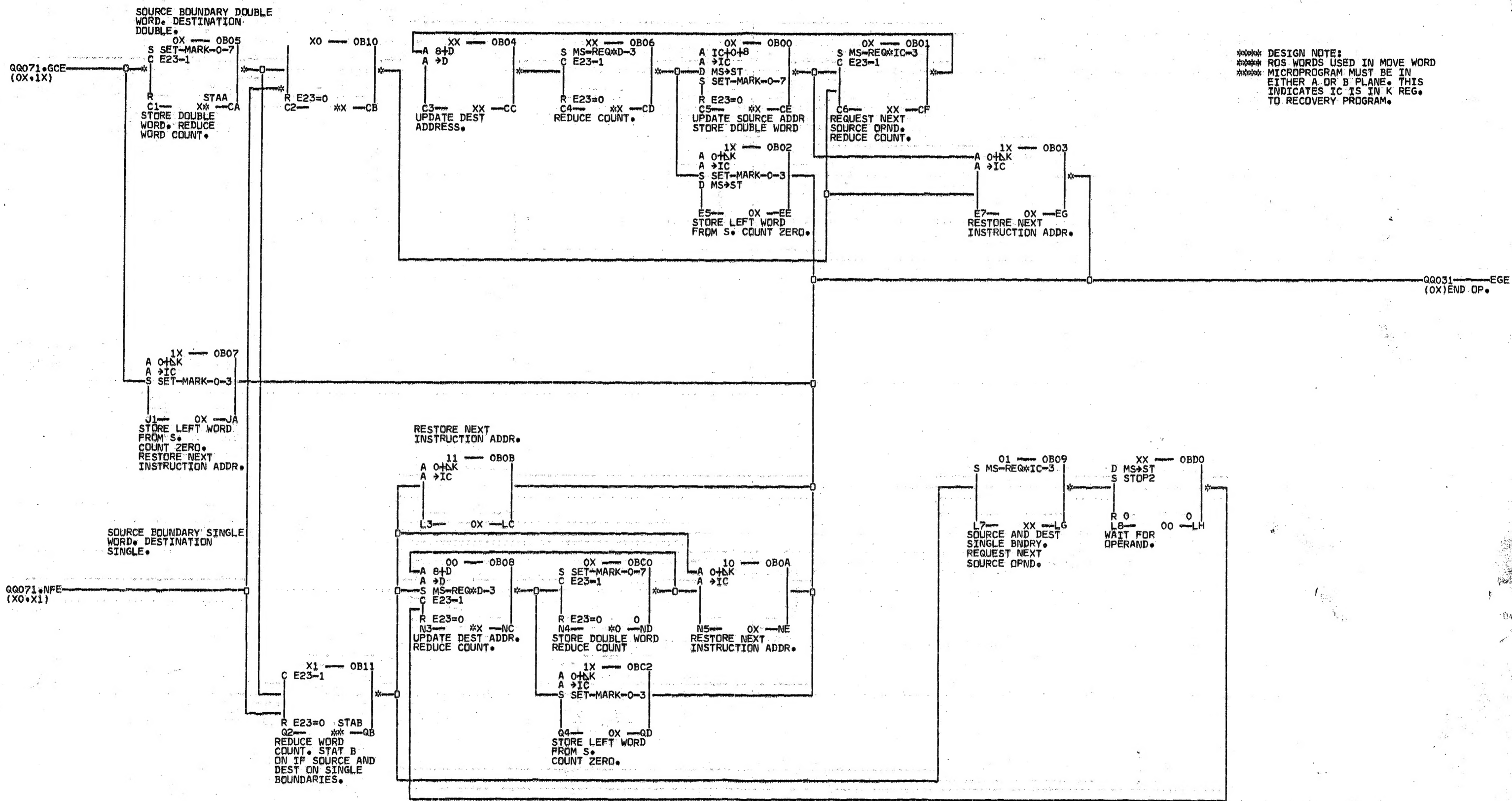
X0 OA50  
C 12+12  
R A7  
STC#3  
X# AG  
SOURCE BNDY.  
SINGLE WORD.  
X1 OA51  
C 12+12  
R A7  
STC#3  
X# CG  
SOURCE BNDY.  
NOT SINGLE. SET  
ASC TO REPETCH  
NEXT INSTRUCTION.

R STC#3  
X# CG  
C7

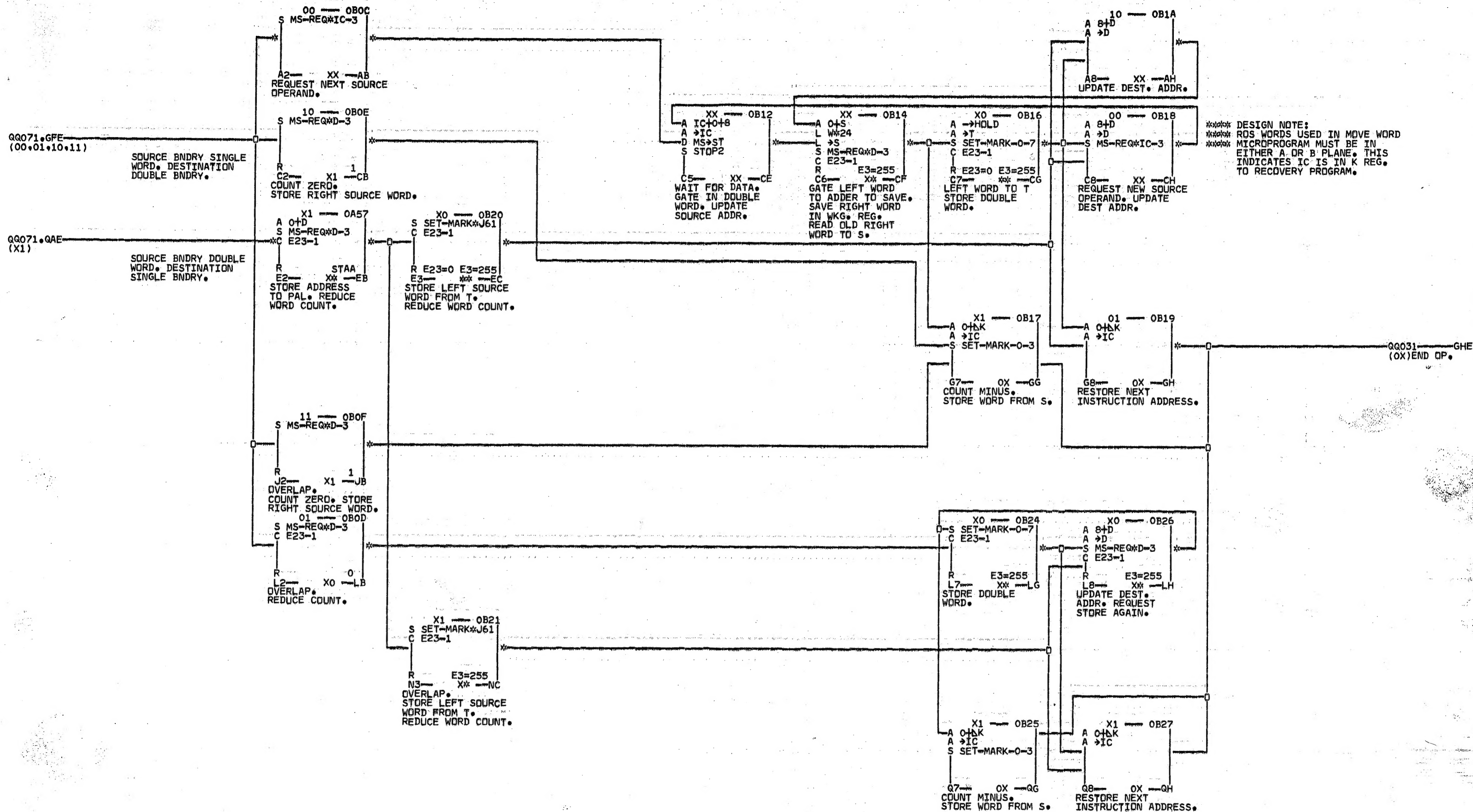
\*\*\*\* DESIGN NOTE:  
\*\*\*\* RDS WORDS USED IN MOVE WORD  
\*\*\*\* MICROPROGRAM MUST BE IN  
\*\*\*\* EITHER A OR B PLANE. THIS  
\*\*\*\* INDICATES IC IS IN K REG.  
\*\*\*\* TO RECOVERY PROGRAM.



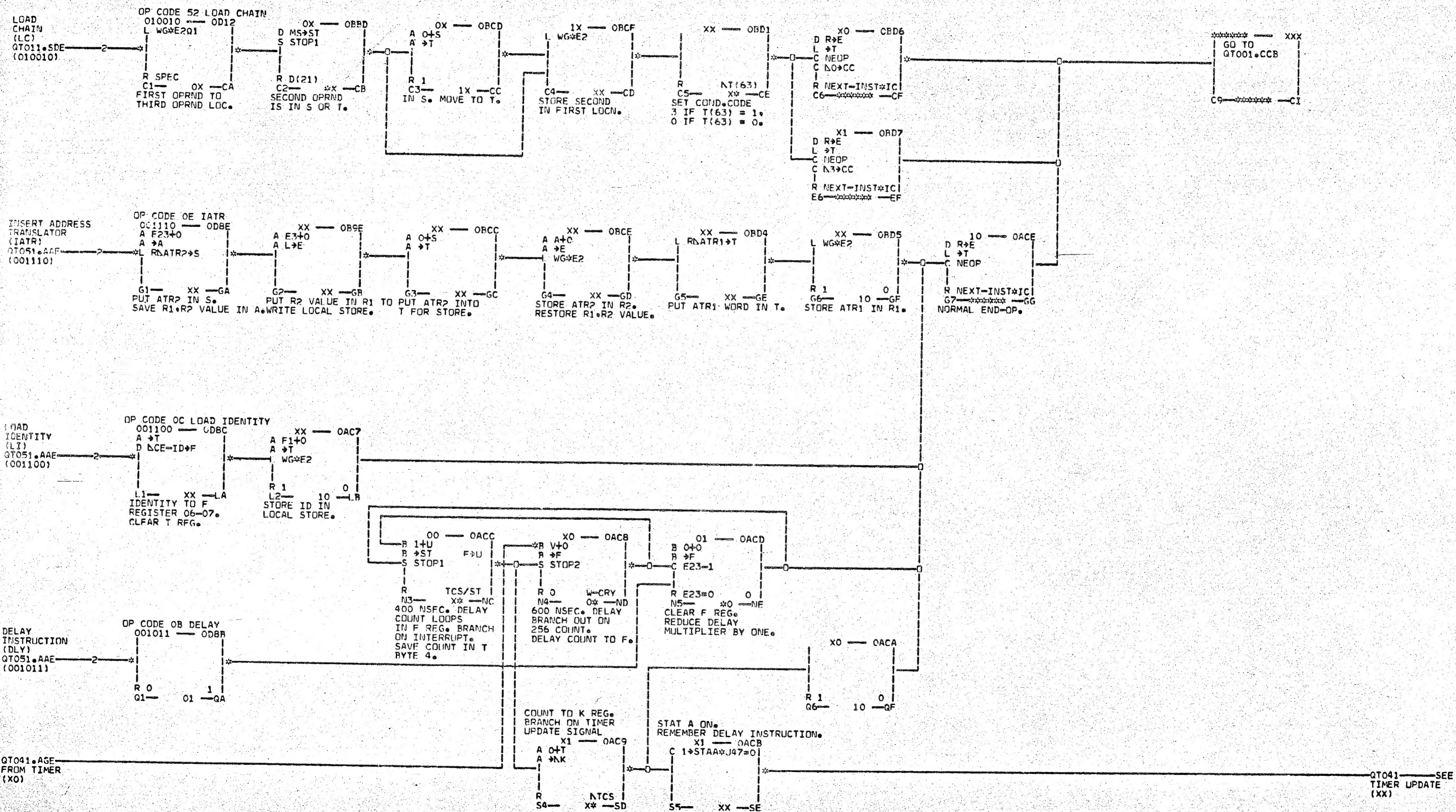




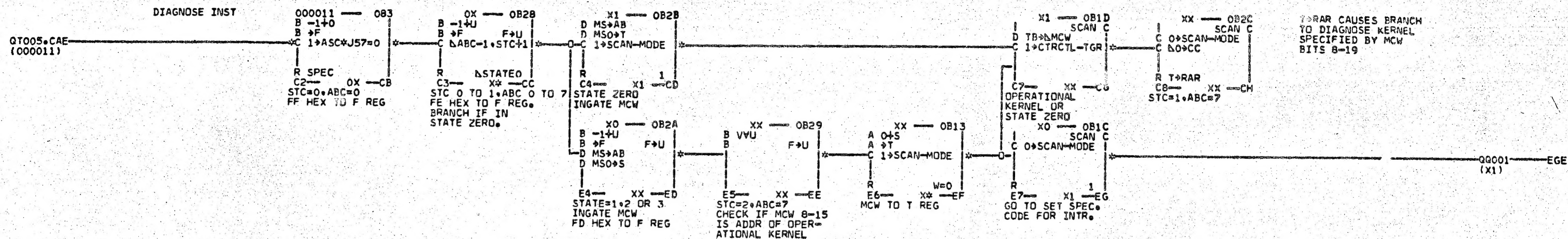




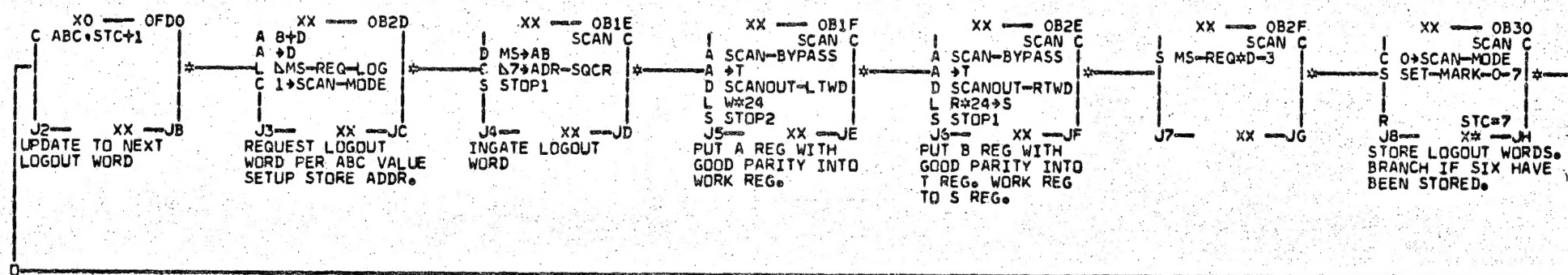




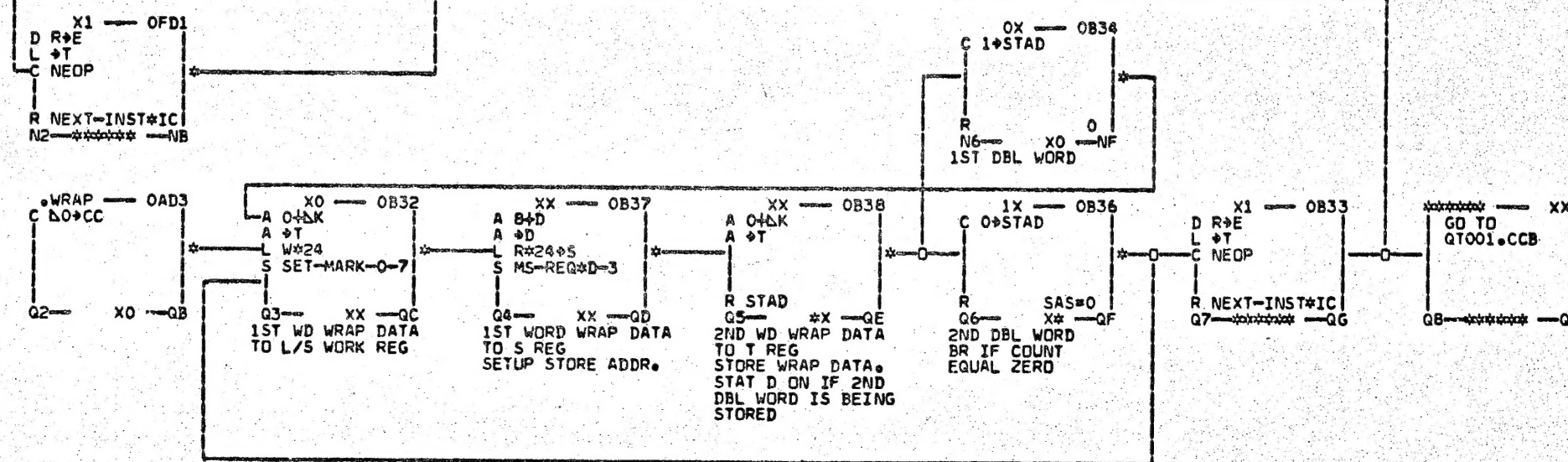




LOGOUT MAIN STORAGE  
DIAGNOSE KERNEL  
ENTRY IS FROM  
DIAGNOSE INST  
Q0171.CH



RESET CHECKS  
DIAGNOSE KERNEL  
ENTRY IS FROM  
DIAGNOSE INST  
Q0171.CH



WRAP  
DIAGNOSE KERNEL  
ENTRY IS FROM  
DIAGNOSE INST  
Q0171.CH

713671

04/28/70

MACH  
NAME  
MODE  
P.N.  
IBM CORP.

C7201-02  
MANUAL  
2583846  
SDD

DATE 05/21/70  
LOG 048

DIAGNOSE INSTRUCTION AND  
KERNELS FDO.FD1

SHEET 1 Q0171  
VERSION



• LDLS — OFD2  
A 0-B  
A → E  
C Δ13 → ADR-SQCR  
R 0  
C2 — 24 TO E REG 11-15  
OO — CB  
C3 — 23 TO E REG 11-15  
XX — CC  
R 0  
C4 — 24 TO S REG 11-15  
XX — CD  
READ L/S REG PER  
E11-15 INTO S REG  
SETUP STORAGE  
ADDRESS  
XX — OB31  
A 8+D  
A → D  
R\*E11-15 → S  
C5 — XX — CE  
XX — OBC1  
1 → SCAN-MODE  
XX — OB35  
SCAN C  
A SCAN-BYPASS  
A → T  
D SCANOUT-LTWD  
L W\*24  
S STOP2  
C6 — XX — CF  
WAIT FOR IND  
LINES TO BECOME  
STABLE. PARITY  
BITS FROM L/S REG  
TO WORK REG.  
XX — OB39  
SCAN C  
A SCAN-BYPASS  
A → T  
D SCANOUT-SREG  
L R\*24 → S  
S STOP1  
C7 — XX — CG  
XX — OB45  
SCAN C  
S MS-REG → D-3  
R E2=15  
C8 — XX — CH  
STORE CONTENTS OF  
L/S REG AND ITS  
PARITY BITS.  
BRANCH IF FLT PT  
REG.  
XX — OB44  
SCAN C  
S SET-MARK-0 → 7  
O → SCAN-MODE  
R E3=0 STA H  
C9 — XX — CI  
GPR OR FAA REG

Diagram illustrating the control logic for the 11 and 1X processors:

- 11 Processor:**
  - Inputs: A 8+D, A +D, L RDATR2+S, C 1+STAG, R STAG, G3
  - Outputs: OB3F, GC
- 1X Processor:**
  - Inputs: L RDAR+S, L ΔGEN-BUS-PAR, C 0+STAG, C 0+STAH, R 0, G4
  - Outputs: OBC3, GD

The diagram shows a connection between the GC output of the 11 processor and the C 0+STAG input of the 1X processor.

Timing diagram for the R0 register. The diagram shows the relationship between the R0 register output (JD) and various control signals (A, C, L, R, O, J4, L4, OX) over time. The R0 register output is shown as a square wave. The control signals are shown as horizontal lines with labels indicating their state or value. The diagram is divided into two main sections by a vertical dashed line. The left section shows the R0 register output (JD) and control signals A, C, L, R, O, J4, L4, OX. The right section shows the R0 register output (JD) and control signals A, C, L, R, O, J4, L4, OX.

```

•LORG — OFD?
A 0+1
A →E
C 1→STAH
C Δ13→ADR-SQCR
N2— XX —NB

```

XX — OBA6

A B+D  
A +D  
D ΔPIR→F  
S MS-REQ+D-3  
C 3+STC

XX — OBA7

B O+U  
B +ST F+U  
S SET-MARK+STC

XX — OBA

XX — QC

10 --- OB42  
L RACKREG2→S  
L ΔGEN-BUS-PAR  
O-C 1→STAG O  
R O  
N4 --- OX ---ND

```

      11 — OB43
A → E
L R→ATRI→S
C O→STAD — O
      R O
Q4 —      OX — QD

```

XX — OB47  
A B+D  
A +D  
L RCCR+S  
R 0  
S4 — OX — SD

STORE PROG. INTR  
REGISTER DIAGNOSE  
KERNEL  
ENTRY IS FROM  
DIAGNOSE INST  
QQ171.CH

\* SPIR --- OFD  
 A B+D  
 A +D  
 D LPIR+P  
 S MS-REQ+D-3  
 C 3+STC  
 |  
 Q6--- XX ---Q

XX — 0B4A  
B 04U  
B 4ST F4U  
S SET-MARK#STC  
R 1 0  
N7— 10 —NG  
STORE IN BYTE 3  
OF WORD FOLLOWING



GO TO  
QT001.CCB

RADAR AND BEACON  
INITIALIZATION. BEACON  
HEADER ANALYSIS.

GPRS 12,13 UNLOADED INTO STORAGE  
WORK AREA STARTING AT SORT  
BIN BASE ADDRESS.  
GPRS WILL BE USED AS WORK REGISTERS  
AND WILL BE RESTORED  
AT END OF INSTRUCTION.

```

CONVERT AND
SORT SYMBOLS
(CSS)
QT051.AAE-----
(000010)
      R1=2 FOR
      BEACON DATA.
      R1=0 FOR
      RADAR OR SS
      DATA.
QQ511.CTE-----
(000010)
RE-ENTER CSS
FROM INTERRUPT
ROUTINE.

```

```

000010 — ODB2
A 0→T
A 0→D
*B — 64+0 *
B 0→F
A 0→GP8B→T
S MS-REQD=3
C2 — XX — CB
FETCH PRIME DATA.
SORT BIN BASE
ADDRESS TO T.
ABC=0.STC=4.

```

XX — OCOC  
 A 0→D  
 A →K  
 L RGP10→S  
 C 0→CC  
 C3 — XX — CC  
 PRIME DATA ADDRESS  
 TO K REG.WORD  
 COUNT TO S.CC SET  
 TO ZERO IN CASE NO  
 OUTPUT DURING  
 THIS EXECUTION.

```

      XX  ---  OCOD
A  O+T
A  D+D
B  VO.OVU
B  F+U
L  RRGPI3+T
S  MS-REQ+D-3
C  1+STA**W*O
C4  ---  XX  ---  CD
SORT BIN BASE ADDRESS
TO D+STORE GPRS 12+13.
SET STAT A IF RIGHT
WORD INDICATOR OFF.

```

```

      XX ----- OCOE
A 0+S
D MS+AB
L RGP12+S
S SET-MARK-0-7
C 0+STC
R CON+E3
R E2=0/
CS----- *X -----CE
PRIME DATA TO AB.
CHECK FOR WORD
COUNT=0.0 TO E3.
BRANCH IF RADAR
DATA.

```

```

      1X ----- OC1A
A  B+D
A  +DWS
B  D.1000+VO
B  VO.0+0.UO
B  +F
S  MS-REQ*D-4
C  STC+1
R
A6----- J57=0
      XX -----AF

```

```

RADAR DATA, FETCH SECOND DOUBLE
WORD OF SORT BIN BASE TO RESTORE
OLD HEADER, OC TO F, STC, 0 TO 1,
BRANCH IF WORD COUNT=0,

```

~~QQ211~~ ~~AFF~~  
 (X1) INPUT WORD  
 COUNT=0, ABC=0,  
 STC=1, F=1C.

Q251- CIE  
(11)RADAR DATA  
RW IND OFF.  
ABC=0.1.STC=1.  
(10)RADAR DATA  
INSTRUCTION  
RE-ENTRY.  
PROCESS UDD  
WORD.F=OC.  
ABC=0.1.STC=1.

Q0251.CHE  
(X1)RADAR  
HEADER PROC-  
ESSED.ABC=0.  
STC=1.

~~QQ211~~ ~~XXXXXXXXXXXXXXXXXXXX~~ GCE  
 (X1) BEACON  
 DATA.INVALID  
 HEADER FORMAT.  
 ABC=1.STC=2.

QQ221-~~XXXXXXXXXX~~JYE  
 (XO)EACON  
 OR RADAR  
 DATA TO GEO-  
 GRAPHIC FILTER  
 ABC=7,STC=3,  
 F=CX.

Q0021.EFE-----  
 XXXXDATA RE-  
 JECTED BY GEOG  
 OR STERILE  
 AREA FILTER.  
 ABOUT.STC=0.

~~QQ211~~ QHE  
(X1) LAST  
DATA BLOCK  
PROCESSED.

—QQ211—GGE  
(X1) INTERRUPT  
PENDING.

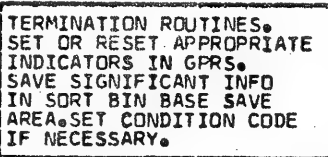
## CSS LOCAL STORAGE ASSIGNMENTS

```
GPR 0.  BIN 0 DISP.BIN 1 DISP.
GPR 1.  BIN 2 DISP.BIN 3 DISP.
GPR 2.  BIN 4 DISP.BIN 5 DISP.
GPR 3.  BIN 6 DISP.BIN 7 DISP.
GPR 4.  BIN 8 DISP.BIN 9 DISP.
GPR 5.  BIN 10 DISP.BIN 11 DISP.
GPR 6.  BIN 12 DISP.BIN 13 DISP.
GPR 7.  BIN 14 DISP.BIN 15 DISP.
GPR 8.(RADAR)RW,DS IND.SORT BIN BASE
GPR 8.(BEACON)DS IND.SORT BIN BASE
GPR 9.  BIN OFLOW NO.PRIME ADDRESS.
GPR 10. DATA COUNT.
GPR 11.(RADAR) CONVERSION CONSTANT
GPR 12.(BEACON)PVD INDEX,ALT MASK,TYPE
      MASK,CONVERSION CONSTANT
GPR 12.  USED FOR WORK REGS.RESTORED
GPR 13.  BEFORE END OP.
GPR 14.  NOT USED BY
GPR 15.  THIS INSTRUCTION.
FPR 0.  GEOGRAPHIC FILTER(YOG,XOG)
FPR 1.  GEOGRAPHIC FILTER(Y1G,X1G)
FPR 2.  STERILE AREA 1 FILTER(YO51,XO51)
FPR 3.  STERILE AREA 1 FILTER(Y151,X151)
FPR 4.  STERILE AREA 2 FILTER(YO52,XO52)
FPR 5.  STERILE AREA 2 FILTER(Y152,X152)
FPR 6.  STERILE AREA 3 FILTER(YO53,XO53)
FPR 7.  STERILE AREA 3 FILTER(Y153,X153)
```

PVD INDEX  
ANALYSIS.  
BYTE  
01234567  
WORD.BIT

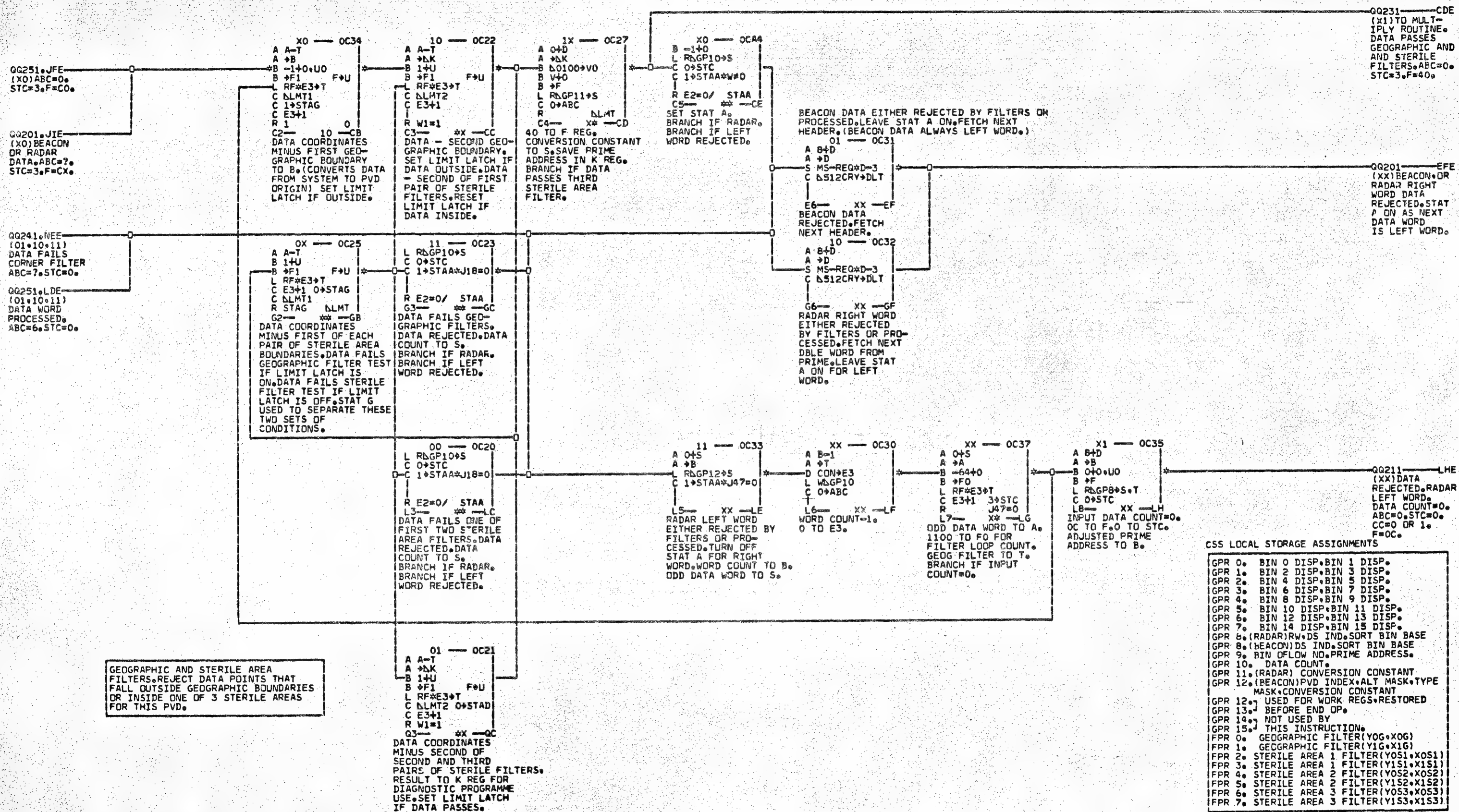
## CSS INSTRUCTION INITIALIZATION AND BEACON HEADER PROCESSING.





713671	04/28/70	MACH NAME MODE P.N. IBM CORP.	C7201-02  MANUAL 2583849 SDD	DATE 05/21/70 LOG 048	SHEET VERSION	1 QQ211
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K REGISTER USED TO SAVE DATA  
FOR DIAGNOSTIC PROGRAMME USE.



713671

04/28/70

MACH  
NAME  
MODE  
P.No.  
IRM CORP.

C7201-02  
MANUAL  
2583850  
SDD

DATE 05/21/70  
LOG 048

CSS GEOGRAPHIC AND STERILE  
AREA FILTERING.

SHEET 1 Q0221  
VERSION



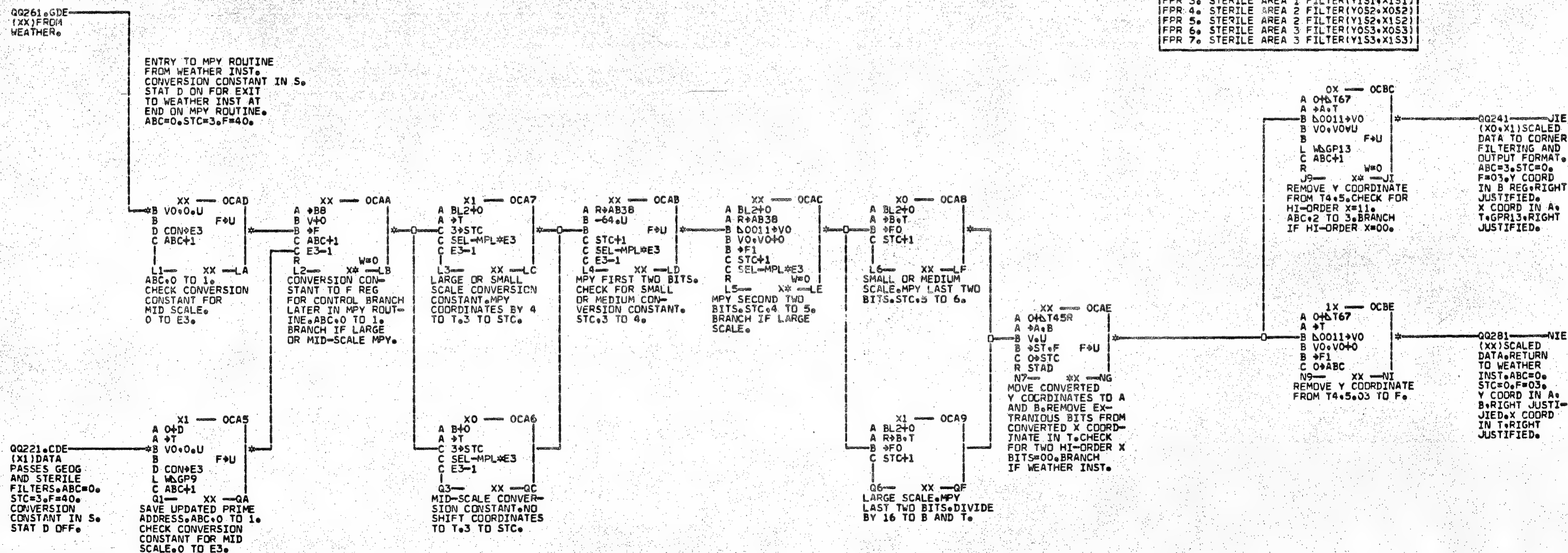
CONVERT DATA POINT FROM  
SYSTEM SCALE TO PVD  
SCALE. RESULT WILL BE  
10 BIT X COORDINATE AND  
10 BIT Y COORDINATE.  
THIS ROUTINE ALSO USED  
BY CWL INSTRUCTION.

### CSS LOCAL STORAGE ASSIGNMENTS

```

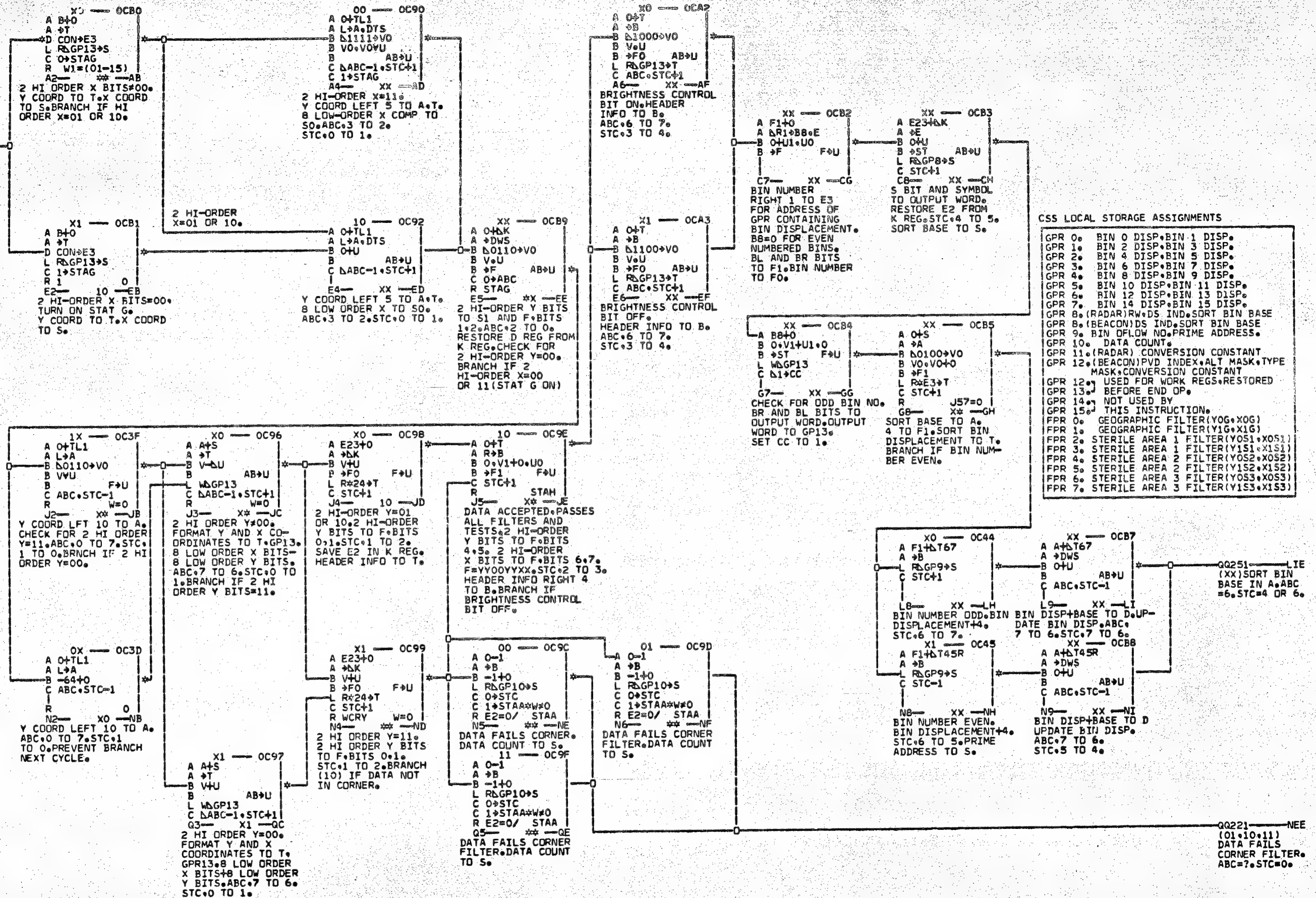
GPR 0.  BIN 0 DISP.BIN 1 DISP.
GPR 1.  BIN 2 DISP.BIN 3 DISP.
GPR 2.  BIN 4 DISP.BIN 5 DISP.
GPR 3.  BIN 6 DISP.BIN 7 DISP.
GPR 4.  BIN 8 DISP.BIN 9 DISP.
GPR 5.  BIN 10 DISP.BIN 11 DISP.
GPR 6.  BIN 12 DISP.BIN 13 DISP.
GPR 7.  BIN 14 DISP.BIN 15 DISP.
GPR 8.  (RADAR)RWDS IND.SORT BIN BASE
GPR 8.  (BEACON)DS IND.SORT BYN BASE
GPR 9.  BIN OFLOW NO.PRIME ADDRESS.
GPR 10. DATA COUNT.
GPR 11. (RADAR) CONVERSION CONSTANT
GPR 12. (BEACON)PVD INDEX,ALT MASK,TYPE
      MASK,CONVERSION CONSTANT
GPR 12. USED FOR WORK REGS.RESTORED
GPR 13. BEFORE END OP.
GPR 14. NOT USED BY
GPR 15. THIS INSTRUCTION.
FPR 0.  GEOGRAPHIC FILTER (Y0G,X0G)
FPR 1.  GEOGRAPHIC FILTER (Y1G,X1G)
FPR 2.  STERILE AREA 1 FILTER (Y0S1,X0S1)
FPR 3.  STERILE AREA 1 FILTER (Y1S1,X1S1)
FPR 4.  STERILE AREA 2 FILTER (Y0S2,X0S2)
FPR 5.  STERILE AREA 2 FILTER (Y1S2,X1S2)
FPR 6.  STERILE AREA 3 FILTER (Y0S3,X0S3)
FPR 7.  STERILE AREA 3 FILTER (Y1S3,X1S3)

```



QQ231-JIE  
(X0,X1) SCALED  
DATA.ABC=3.  
STC=0.F=03.  
Y COORD IN B.  
X COORD IN A.  
Y GP13.

REJECT DATA POINTS THAT  
FALL IN PVD CORNERS. FORMAT  
HEADER INFO AND SCALED  
Y,X COORDINATES INTO OUT-  
PUT FORMAT. DETERMINE BIN  
NUMBER INTO WHICH OUTPUT  
DATA WORD WILL BE SORTED  
(BIN NUMBER=2 HI-ORDER  
BITS OF Y AND X((YYXX))).  
ADD BIN ADDRESS DISPLACE-  
MENT PER BIN NUMBER TO SORT  
BIN BASE TO DETERMINE NEXT  
VACANT LOCATION IN OUTPUT  
BIN.



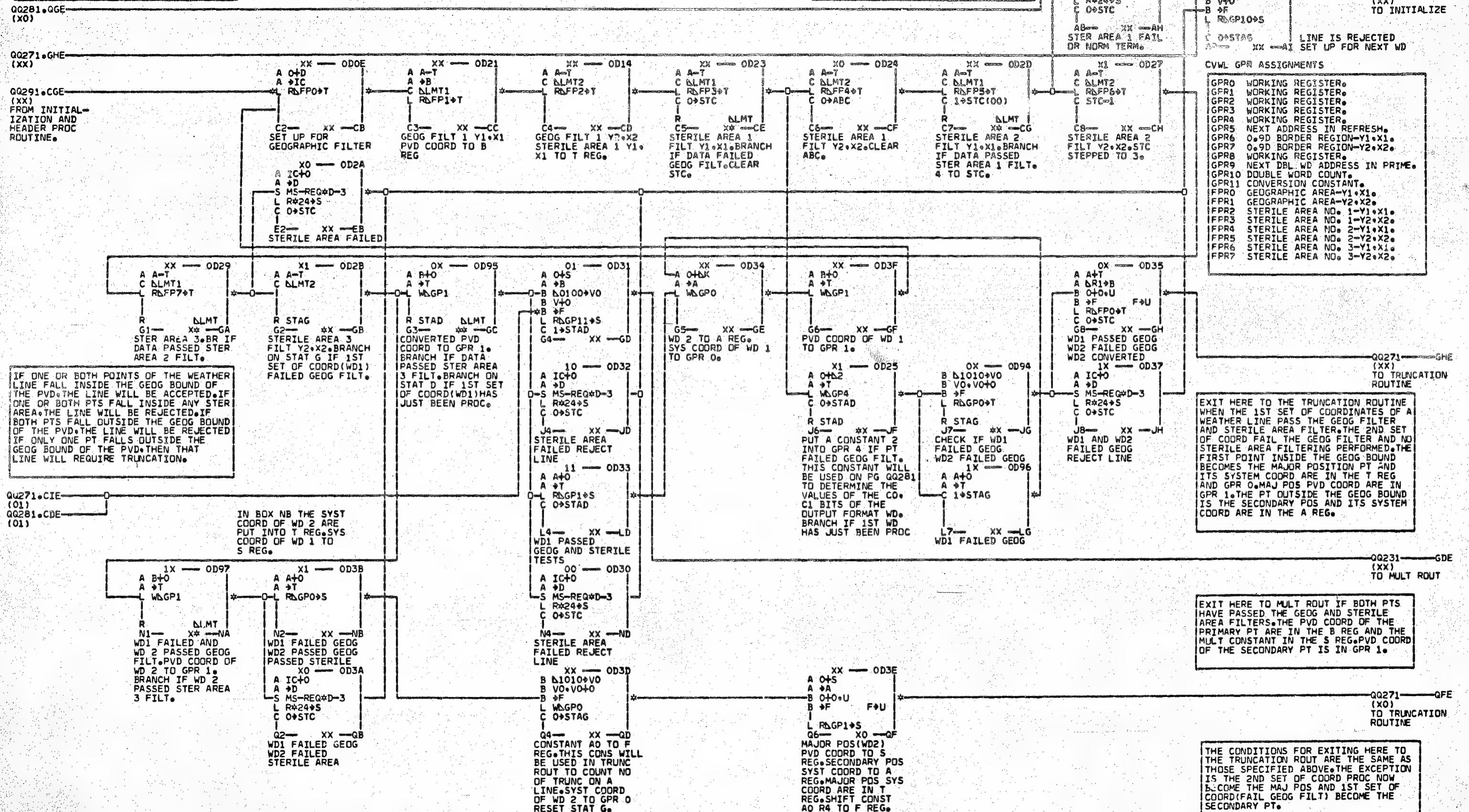






ENTRY FROM QQ2B1.QGE INDICATES A WEATHER LINE HAS JUST BEEN PROC AND STORED INTO REFRESH MEM.

BLOCK AH IS A COMMON TERMINATION BLK USED FOR STERILE AREA 1 FAIL AND NORMAL TERMINATION.

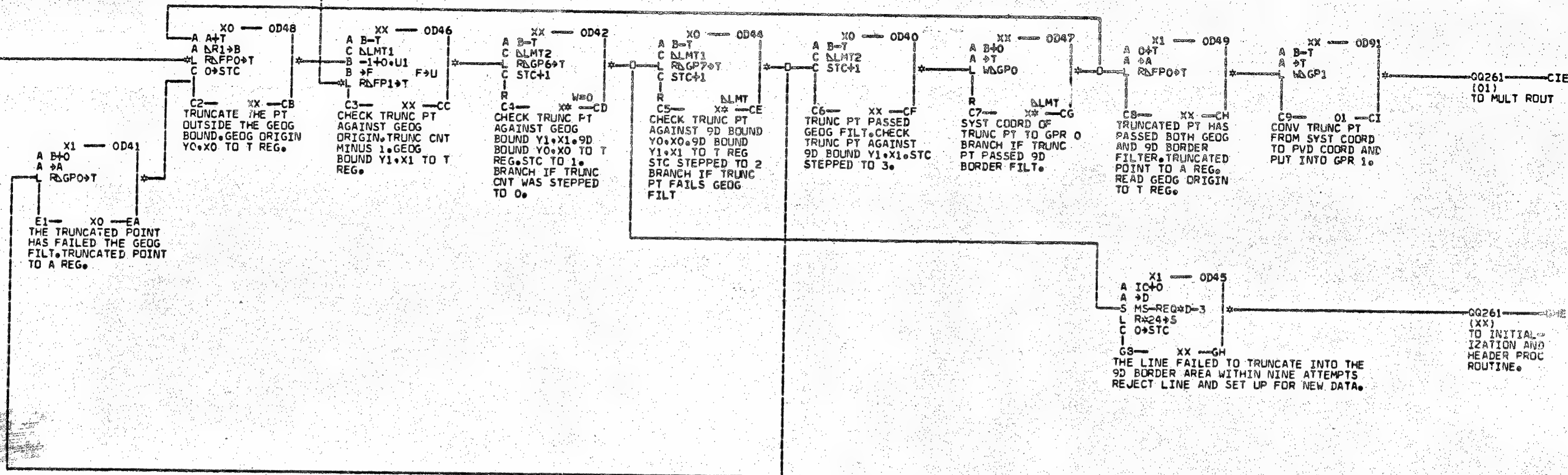


16000

QQ261.GHE  
(XX)  
FROM GEOG AND  
STERILE AREA  
FILTERING.

QQ261.QFE  
(X0)  
FROM GEOG AND  
STERILE AREA  
FILTERING.

EXIT TO MULT ROUT VIA QQ261 AND MULT  
THE MAJOR POSITION FIRST BY THE  
CONSTANT IN GPR 11 FOLLOWED BY A  
MULT OF THE SECONDARY POSITION.



TRUNCATION IS THE ADDITION OF A POINT OUTSIDE THE GEOGRAPHIC BOUNDARY WITH A POINT INSIDE THE GEOGRAPHIC BOUNDARY AND HALVING THE RESULT. BOTH THE Y AND X COMPONENTS OF EACH POINT WILL BE TRUNCATED IN THE SAME OPERATION AND THE RESULTS OF WHICH WILL BE PLACED INTO THE B REG.

THE PURPOSE OF TRUNCATION IS TO RETURN A PT WHICH LIES OUTSIDE THE GEO BOUN OF A PVL TO SOME PT WITHIN THE GEOG BOUND AND THE 9D BORDER OF THE PVD. THE ABOVE HALVING FUNCTION IS APPLIED. A MAXIMUM OF NINE ATTEMPTS ARE MADE TO RETURN THE POINT TO THE PVD AREA. IF TRUNCATION IS NOT SUCCESSFUL AFTER THESE ATTEMPTS THEN THE LINE WILL BE REJECTED.

#### CVWL GPR ASSIGNMENTS.

GPR0 WORKING REGISTER.  
GPR1 WORKING REGISTER.  
GPR2 WORKING REGISTER.  
GPR3 WORKING REGISTER.  
GPR4 WORKING REGISTER.  
GPR5 NEXT ADDRESS IN REFRESH.  
GPR6 0.9D BORDER REGION-Y1.X1.  
GPR7 0.9D BORDER REGION-Y2.X2.  
GPR8 WORKING REGISTER.  
GPR9 NEXT DBL WD ADDRESS IN PRIME.  
GPR10 DOUBLE WORD COUNT.  
GPR11 CONVERSION CONSTANT.  
FPR0 GEOGRAPHIC AREA-Y1.X1.  
FPR1 GEOGRAPHIC AREA-Y2.X2.  
FPR2 STERILE AREA NO. 1-Y1.X1.  
FPR3 STERILE AREA NO. 1-Y2.X2.  
FPR4 STERILE AREA NO. 2-Y1.X1.  
FPR5 STERILE AREA NO. 2-Y2.X2.  
FPR6 STERILE AREA NO. 3-Y1.X1.  
FPR7 STERILE AREA NO. 3-Y2.X2.



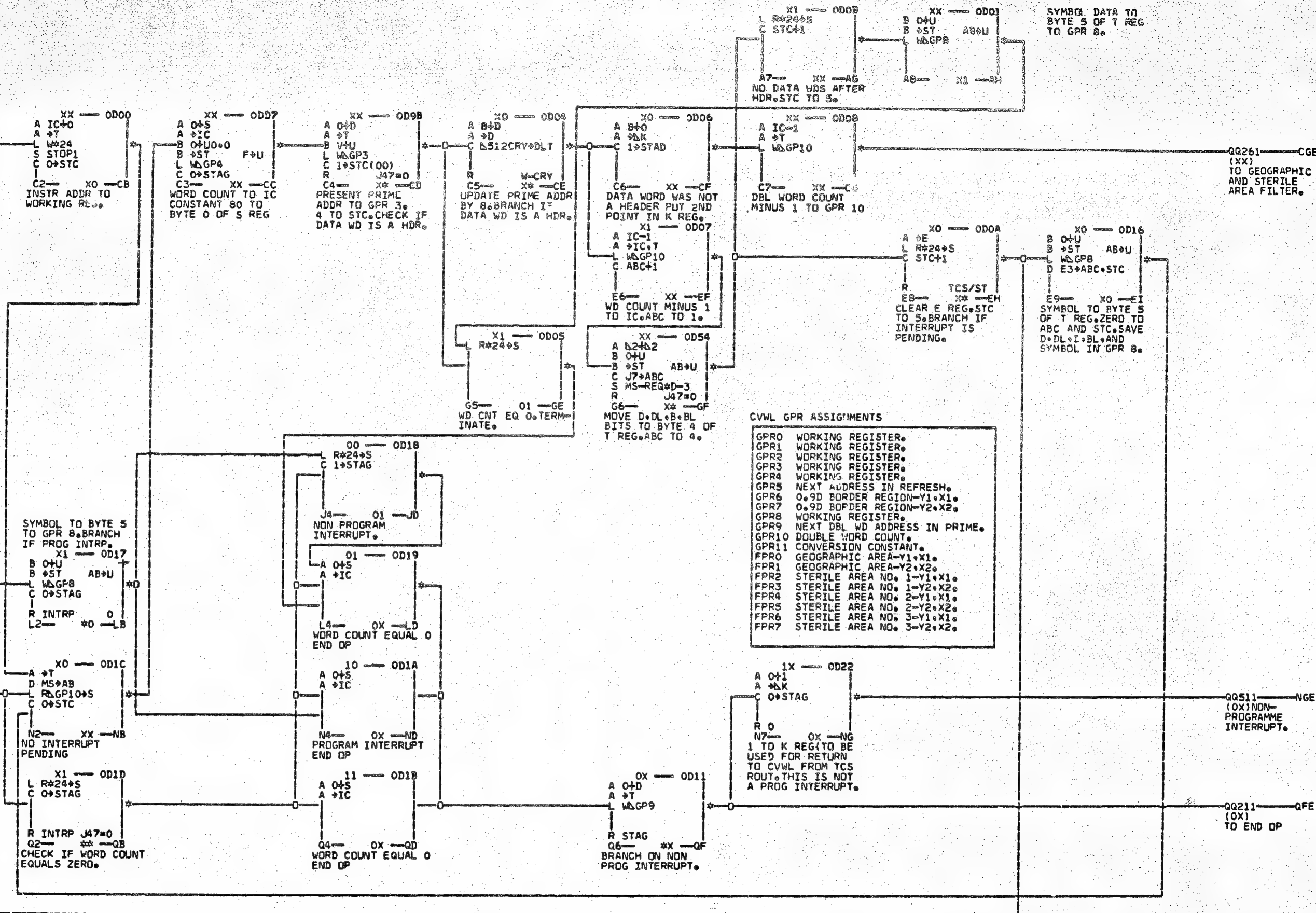


CONVERT  
WEATHER LINES  
(CVWL)  
Q051.AAE—2—  
(000011)  
Q0511.AIE—  
(000011)  
RE-ENTER CVWL  
FROM INTERRUPT  
ROUTINE.

THE SYMBOL, D, DL, B, AND BL INFO IS  
TAKEN FROM THE HEADER DBL WD AND PUT  
INTO GPR8. IF THE DBL WD BEING PROC-  
ESSED IS NOT A HEADER WD THEN IT IS  
ASSUMED THAT WHATEVER IS CONTAINED  
IN GPR8 IS THE HEADER INFO ASSOC-  
IATED WITH THAT DATA. WHEN THE PROC-  
ESSING OF ONE WEATHER LINE IS COMP-  
LETED, PROVISIONS ARE MADE TO HONOR  
ANY INTERRUPT THAT MAY BE PENDING

Q0261.AIE—  
(XX)  
A O+S  
L WGP4  
C O+ABC  
R N1—  
TCS/ST  
X\*—NA  
BRANCH IF INTRP  
IS PENDING.

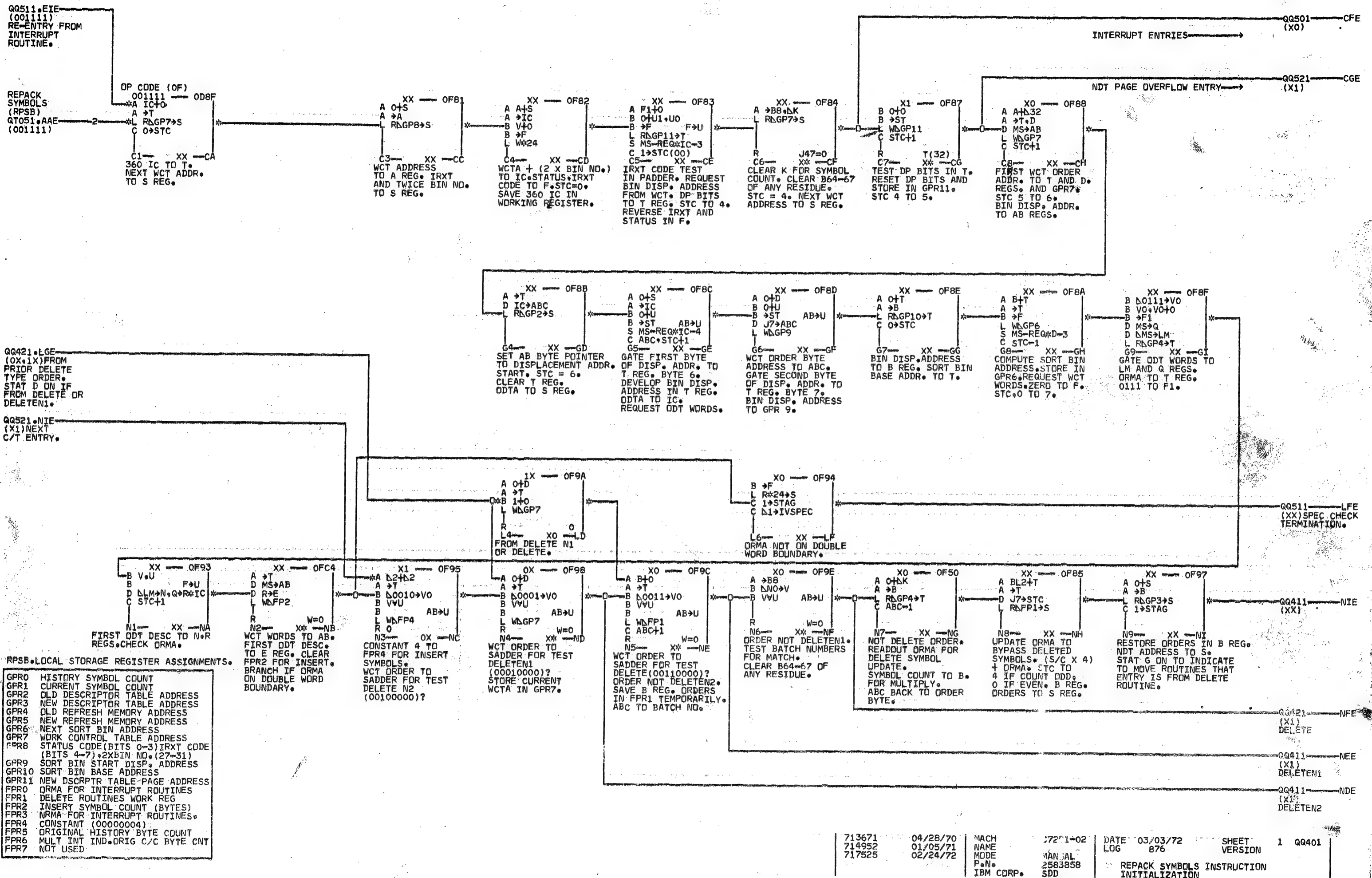
ENTRANCE INTO THIS PAGE FROM Q0261  
INDICATES THAT A SET OF WEATHER  
COORDINATES HAVE BEEN PROCESSED.



CVWL GPR ASSIGNMENTS

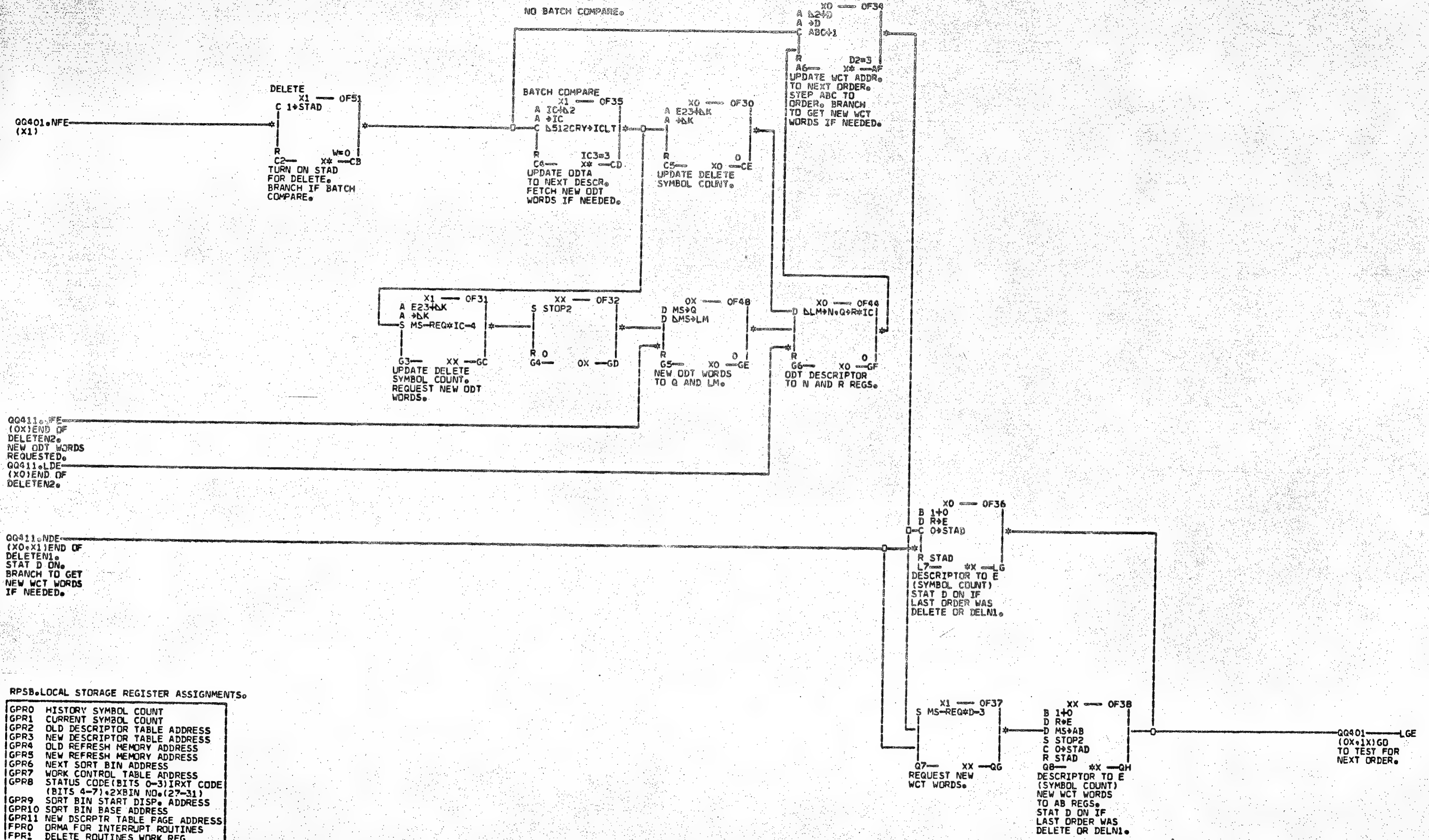
GPR0	WORKING REGISTER.
GPR1	WORKING REGISTER.
GPR2	WORKING REGISTER.
GPR3	WORKING REGISTER.
GPR4	WORKING REGISTER.
GPR5	NEXT ADDRESS IN REFRESH.
GPR6	0.9D BORDER REGION-Y1.X1.
GPR7	0.9D BORDER REGION-Y2.X2.
GPR8	WORKING REGISTER.
GPR9	NEXT DBL WD ADDRESS IN PRIME.
GPR10	DOUBLE WORD COUNT.
GPR11	CONVERSION CONSTANT.
FPR0	GEOGRAPHIC AREA-Y1.X1.
FPR1	GEOGRAPHIC AREA-Y2.X2.
FPR2	STERILE AREA NO. 1-Y1.X1.
FPR3	STERILE AREA NO. 1-Y2.X2.
FPR4	STERILE AREA NO. 2-Y1.X1.
FPR5	STERILE AREA NO. 2-Y2.X2.
FPR6	STERILE AREA NO. 3-Y1.X1.
FPR7	STERILE AREA NO. 3-Y2.X2.











RPSB LOCAL STORAGE REGISTER ASSIGNMENTS.

GPR0	HISTORY SYMBOL COUNT
GPR1	CURRENT SYMBOL COUNT
GPR2	OLD DESCRIPTOR TABLE ADDRESS
GPR3	NEW DESCRIPTOR TABLE ADDRESS
GPR4	OLD REFRESH MEMORY ADDRESS
GPR5	NEW REFRESH MEMORY ADDRESS
GPR6	NEXT SORT BIN ADDRESS
GPR7	WORK CONTROL TABLE ADDRESS
GPR8	STATUS CODE (BITS 0-3) IRXT CODE (BITS 4-7) 2XBIN NO. (27-31)
GPR9	SORT BIN START DISP. ADDRESS
GPR10	SORT BIN BASE ADDRESS
GPR11	NEW DSCRPTR TABLE PAGE ADDRESS
FPR0	ORMA FOR INTERRUPT ROUTINES
FPR1	DELETE ROUTINES WORK REG
FPR2	INSERT SYMBOL COUNT (BYTES)
FPR3	NRMA FOR INTERRUPT ROUTINES.
FPR4	CONSTANT (00000004)
FPR5	ORIGINAL HISTORY BYTE COUNT
FPR6	MULT INT IND. ORIG C/C BYTE CNT
FPR7	NOT USED

Q  
4  
2  
1

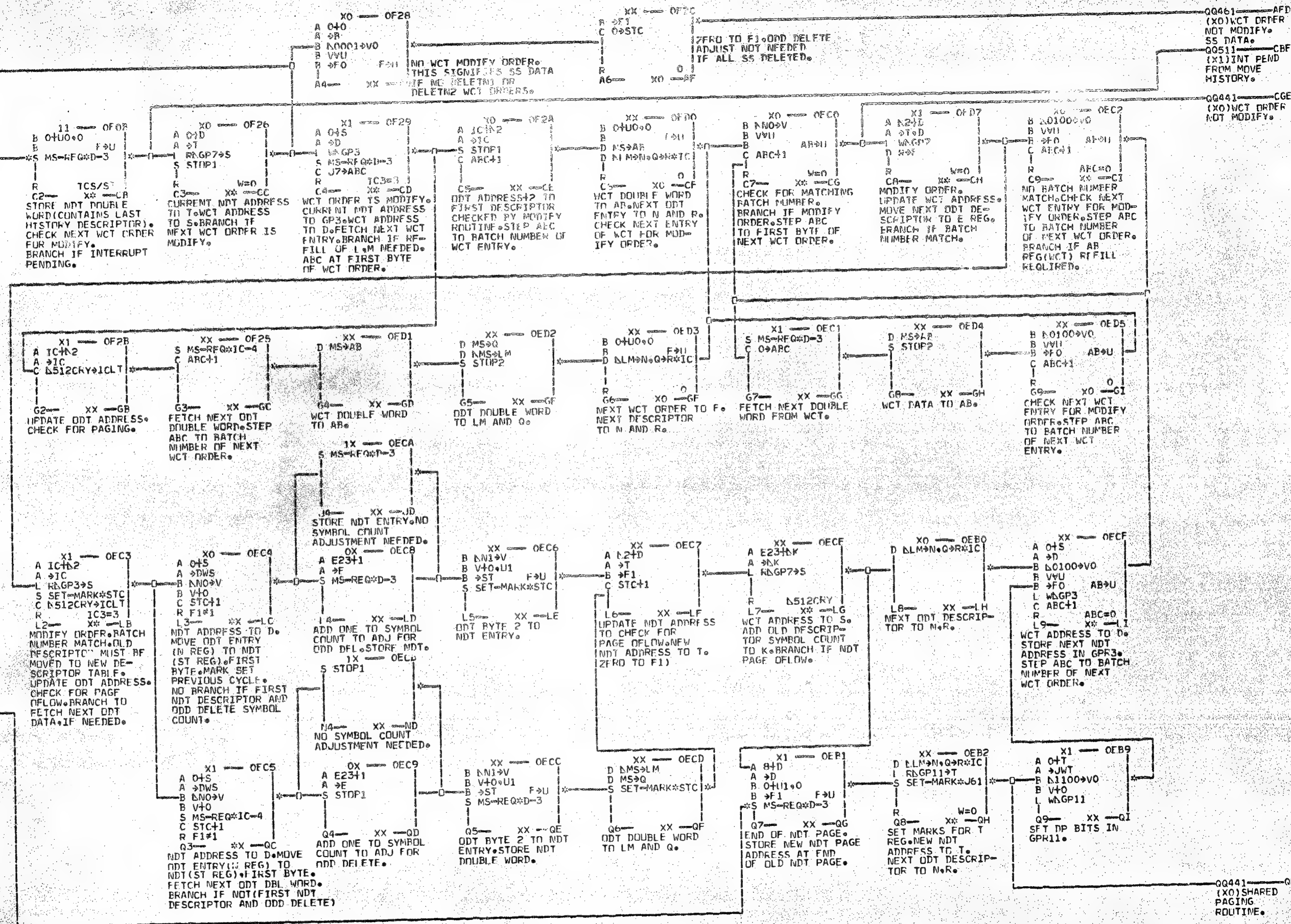
Q0501.CHF  
(X0,X1)  
INTERUPT RE-  
ENTRY.

Q0441.CHF  
(X1)FROM MOVE  
HISTORY ROUT-  
INE.

Q0441.QHE  
(X1)SHARED  
PAGING ROUTINE

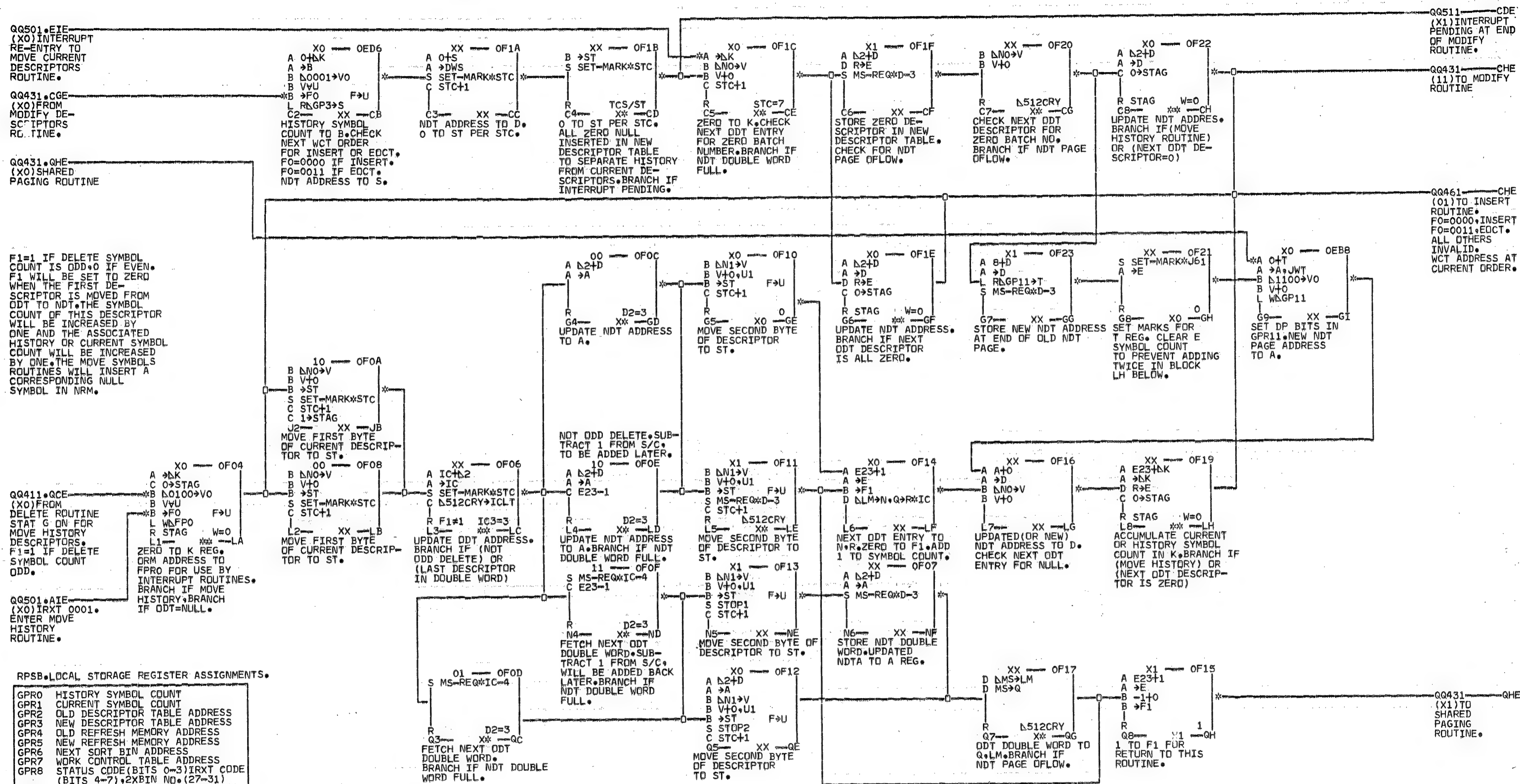
# RPSB LOCAL STORAGE REGISTER ASSIGNMENTS

GPR0	HISTORY SYMBOL COUNT
GPR1	CURRENT SYMBOL COUNT
GPR2	OLD DESCRIPTOR TABLE ADDRESS
GPR3	NEW DESCRIPTOR TABLE ADDRESS
GPR4	OLD REFRESH MEMORY ADDRESS
GPR5	NEW REFRESH MEMORY ADDRESS
GPR6	NEXT SORT RIN ADDRESS
GPR7	WORK CONTROL TABLE ADDRESS
GPR8	STATUS CODE (BITS 0-3)IRXT CNDF (BITS 4-7)2XBIN NO.(27-31)
GPR9	SORT RIN START ADDRESS (DISP)
GPR10	SORT RIN BASE ADDRESS
GPR11	NEW DESCRIPTOR TABLE PAGE ADDRESS
FPR0	OPMA FOR INTERRUPT ROUTINES
FPR1	DELETE ROUTINES WORK REG
FPR2	INSERT SYMBOL COUNT (BYTES)
FPR3	NRMA FOR INTERRUPT ROUTINES
FPR4	CONSTANT (00000004)
FPR5	ORIGINAL HISTORY BYTE COUNT
FPR6	MULT INT IND.ORG C/C BYTE CNT
FPR7	NOT USED





MOVE HISTORY SYMBOL COUNT TO B.  
CHECK NEXT WCT ORDER FOR INSERT  
OR EDCT. NDT ADDRESS IN T.  
FO=0000 IF INSERT. FO=0011 IF EDCT.



## RPSB LOCAL STORAGE REGISTER ASSIGNMENTS.

```

GPR0  HISTORY SYMBOL COUNT
GPR1  CURRENT SYMBOL COUNT
GPR2  OLD DESCRIPTOR TABLE ADDRESS
GPR3  NEW DESCRIPTOR TABLE ADDRESS
GPR4  OLD REFRESH MEMORY ADDRESS
GPR5  NEW REFRESH MEMORY ADDRESS
GPR6  NEXT SORT BIN ADDRESS
GPR7  WORK CONTROL TABLE ADDRESS
GPR8  STATUS CODE(BITS 0-3)IRXT CODE
      (BITS 4-7)2XBIN No.(27-31)
GPR9  SORT BIN START ADDRESS (DISP)
GPR10 SORT BIN BASE ADDRESS
GPR11 NEW DESCRIPTOR TABLE PAGE ADDRESS
FPR0  ORMA FOR INTERRUPT ROUTINES
FPR1  DELETE ROUTINES WORK REG
FPR2  INSERT SYMBOL COUNT (BYTES)
FPR3  NRMMA FOR INTERRUPT ROUTINES.
FPR4  CONSTANT (000000004)
FPR5  ORIGINAL HISTORY BYTE COUNT
FPR6  MULT INT IND.ORIG C/C BYTE CNT
FPR7  NOT USED

```

713671	04/28/70
714944	06/09/70
717525	01/10/72

MACH  
NAME  
MODE  
P.N.  
IBM CORP.

7201-02  
ANUAL  
583862

DATE 03/03/72  
LOG 876

SHEET  
VERSION

1 QQ441

RPSB INST. MOVE HISTORY OR  
CURRENT DESCRIPTORS.





COMING INTO PAGE FROM PAGE  
Q0441.CHE THE FOLLOWING CONDITIONS  
EXIST:  
(1)D REG=NEW DESCRIPTOR TABLE ADDR.  
(2)IC=OLD DESCRIPTOR TABLE ADDR.  
(3)FO=ZERO IF NEXT WCT ORDER IS AN  
INSERT AND FO=THREE IF NEXT ORDER  
IS AN END OF CLASS TYPE. ANY OTHER  
VALUE IN FO INDICATES AN INVALID  
SEQUENCE.  
(4)K REG=CURRENT SYMBOL COUNT.

Q0501.GIF  
(XX) INTERRUPT  
RE-ENTRY TO  
INSERT ROUTINE

Q0431.AFP  
(X) SINGLE  
SYMBOL DATA.

Q0441.CHE  
(01) FROM MOVE  
CURRENT  
DESCRIPTORS  
ROUTINE.  
HISTORY COUNT  
IN B REG.  
CURRENT COUNT  
IN K REG.

Q0471.CHE  
(XX)  
FROM LAST PNT  
INS. MORE INS  
ORDERS TO BE  
EXEC IN THIS  
CLASS TYPE.

Q0531 AGE  
(XX)  
TO END OF  
CLASS TYPE  
ROUTINE.

Q0511 CFE  
(XX)  
ILLEGAL  
SEQUENCE  
TERMINATE

Q0511 EPT  
(X1)  
END OF MOVE  
CURRENT DESC  
INTERUPT IS  
PENDING

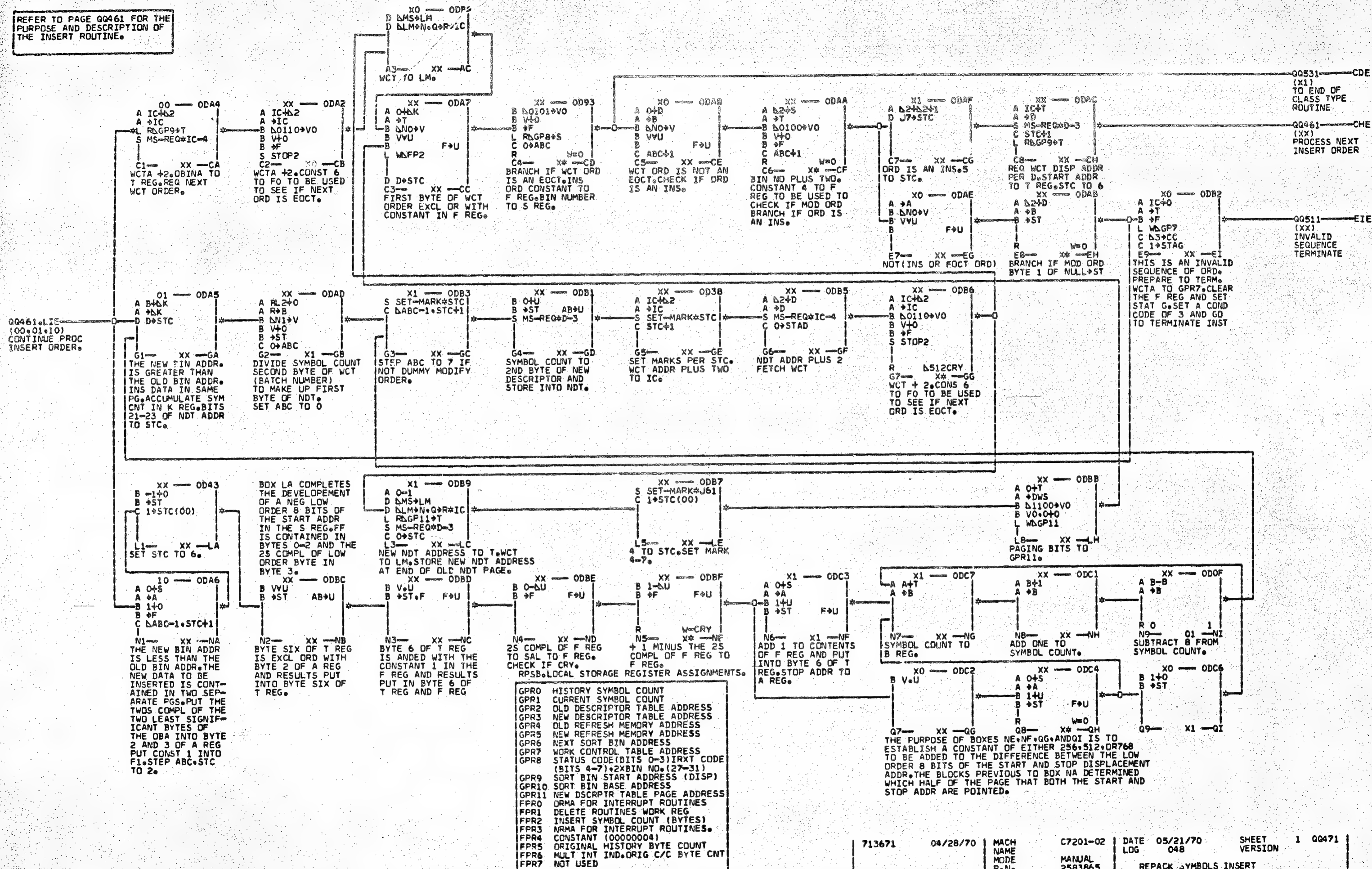
Q0471 LIE  
(00,01,10)  
BUILD NEW  
DESCRIPTOR

# RPSB LOCAL STORAGE REGISTER ASSIGNMENTS.

GPR0 HISTORY SYMBOL COUNT  
GPR1 CURRENT SYMBOL COUNT  
GPR2 OLD DESCRIPTOR TABLE ADDRESS  
GPR3 NEW DESCRIPTOR TABLE ADDRESS  
GPR4 OLD REFRESH MEMORY ADDRESS  
GPR5 NEW REFRESH MEMORY ADDRESS  
GPR6 NEXT SORT BIN ADDRESS  
GPR7 WORK CONTROL TABLE ADDRESS  
GPR8 STATUS CODE (BITS 0-3) IRXT CODE  
(BITS 4-7), 2XBIN NO. (27-31)  
GPR9 SORT BIN START ADDRESS (DISP)  
GPR10 SORT BIN BASE ADDRESS  
GPR11 NEW DESCRIPTOR TABLE PAGE ADDRESS  
FPR0 ORMA FOR INTERRUPT ROUTINES  
FPR1 DELETE ROUTINES WORK REG  
FPR2 INSERT SYMBOL COUNT (BYTES)  
FPR3 ORMA FOR INTERRUPT ROUTINES.  
FPR4 CONSTANT (00000004)  
FPR5 ORIGINAL HISTORY BYTE COUNT  
FPR6 MULT INT IND. ORIG C/C BYTE CNT  
FPR7 NOT USED

THE PURPOSE OF THE INSERT NEW DESC-  
RIPTOR ROUTINE WILL BE TO COMPUTE  
THE NUMBER OF NEW SYMBOLS THAT ARE  
TO BE INSERTED INTO THE NEW REFRESH  
AREA OF MEMORY AND CONSTRUCT A DESC-  
RIPTOR CONTAINING A BATCH NO AND A  
SYMBOL COUNT AND ADD IT TO THE NDT  
THE NEXT ORDER IN THE WCT TO BE  
ACCESSED WILL BE TAKEN FROM THE 18TH  
HALF WD POSITION FROM THE GIVEN INS  
ORDER. EVERY INSERT ORDER WILL LIE ON  
A HALF WD BOUND AND IS IMMEDIATELY  
FOLLOWED BY ITS OWN TABLE OF 16 BIN  
DISPLACEMENT VALUES

REFER TO PAGE Q0461 FOR THE PURPOSE AND DESCRIPTION OF THE INSERT ROUTINE.





ENTRY INTO THIS PAGE FROM QQ531.NHE INDICATES THE NEW DESC TABLE FOR ONE CLASS TYPE HAS BEEN BUILT.  
(1) B REG=HISTORY COUNT - 8.  
(2) IC=OLD REFRESH MEM ADDR + 8.  
(3) D REG=NEW REFRESH MEM ADDR - 8.  
(4) LM REG=1ST WD OF ORM TO BE MOVED

QQ531.NHE  
(00,10)  
FROM END OF  
CLASS TYPE  
RGUY, LAST DESC  
OF NEW DESCRIP  
TABLE

QQ491.EHE  
(00)  
FROM ORM TO  
NRM MOVE, LAST  
SYM TO BE  
MOVED.

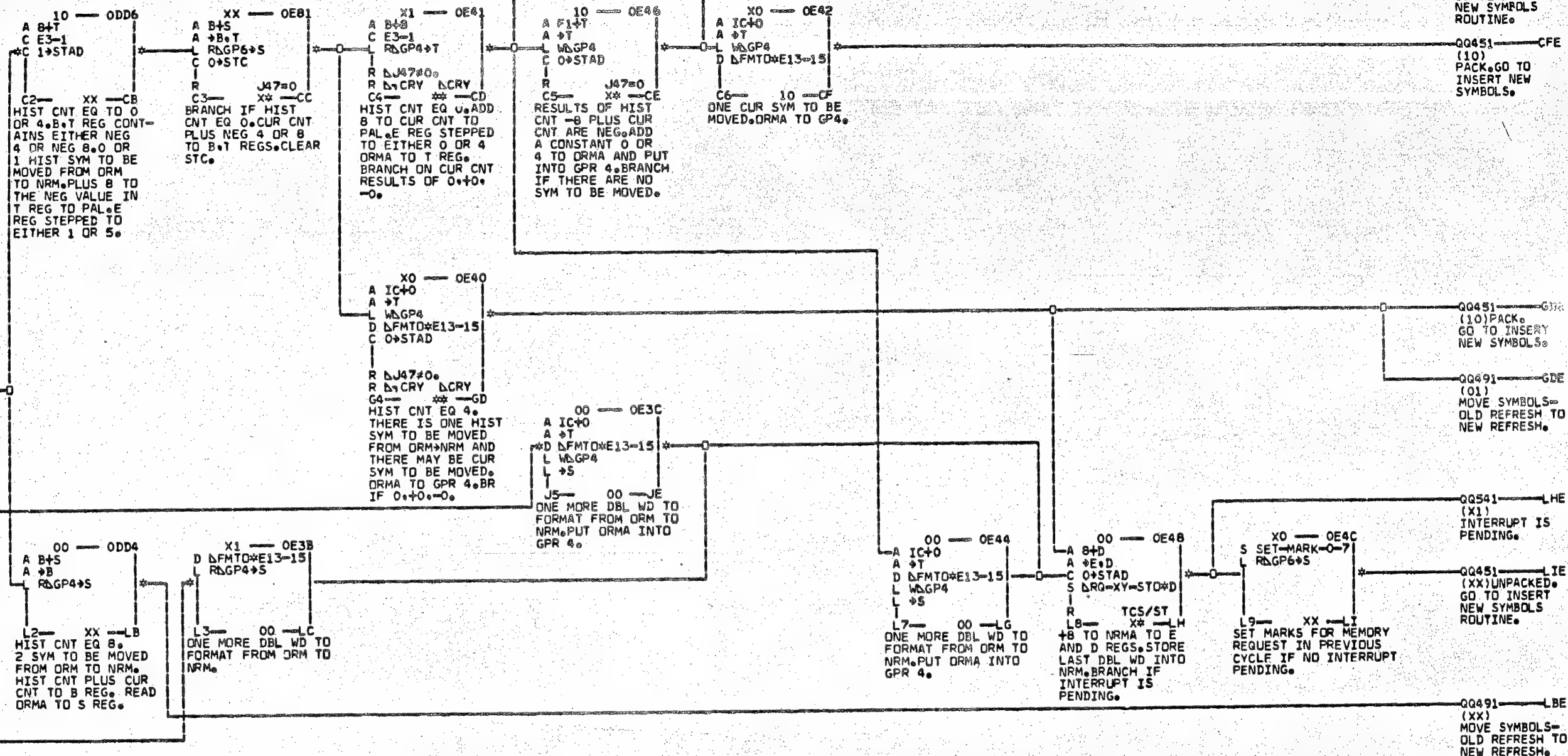
ENTRY INTO THIS  
PAGE FROM QQ491  
INDICATES ALL BUT  
TWO SYM HAVE BEEN  
MOVED FROM ORM TO  
NRM.

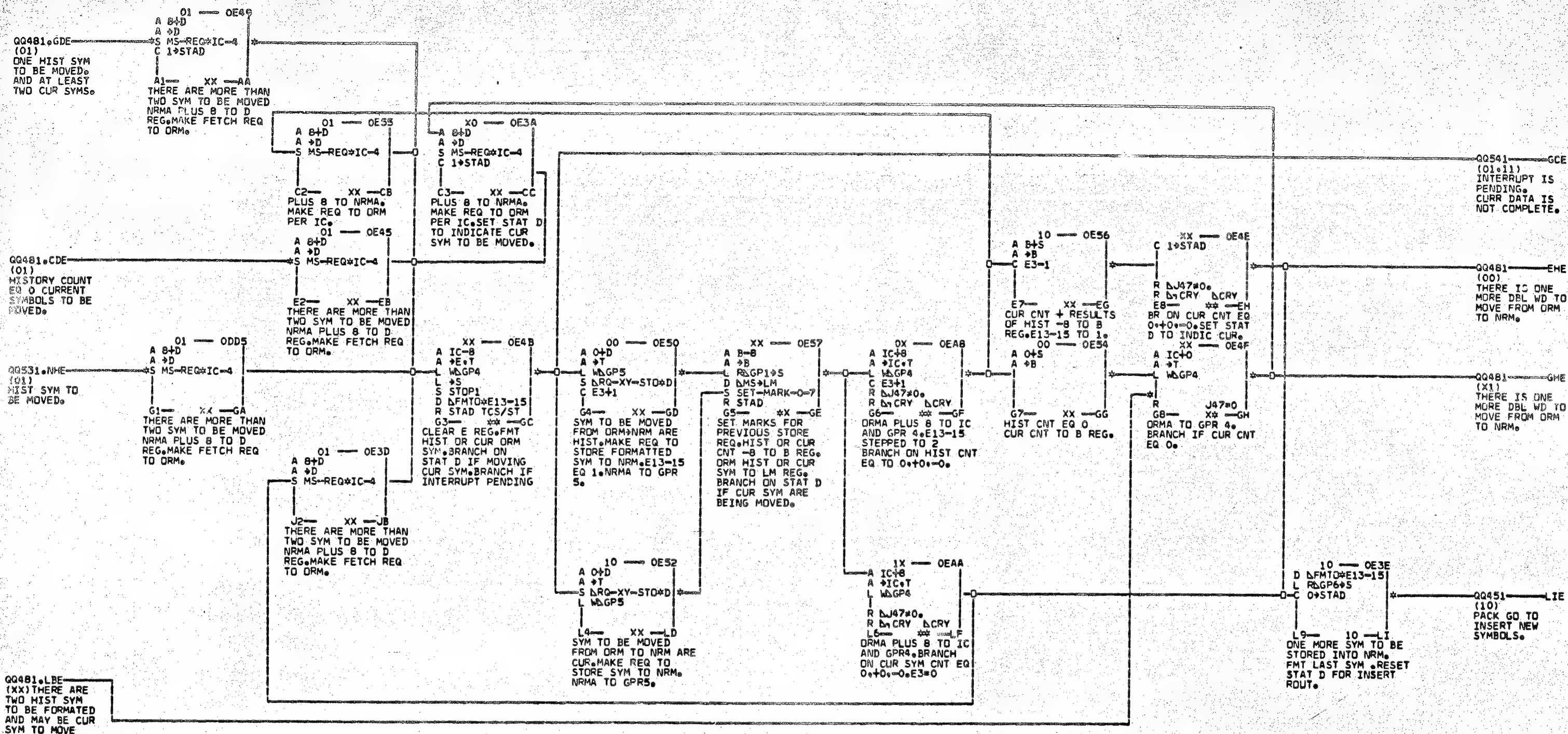
QQ491.GHE  
(X1) FROM ORM  
TO NRM MOVE.  
LAST SYM TO  
BE MOVED.

#### RPSB, LOCAL STORAGE REGISTER ASSIGNMENTS.

GPR0 HISTORY SYMBOL COUNT  
GPR1 CURRENT SYMBOL COUNT  
GPR2 OLD DESCRIPTOR TABLE ADDRESS  
GPR3 NEW DESCRIPTOR TABLE ADDRESS  
GPR4 OLD REFRESH MEMORY ADDRESS  
GPR5 NEW REFRESH MEMORY ADDRESS  
GPR6 NEXT SORT BIN ADDRESS  
GPR7 WORK CONTROL TABLE ADDRESS  
GPR8 STATUS CODE (BITS 0-3) IRXT CODE  
(BITS 4-7), 2XBIN NO. (27-31)  
GPR9 SORT BIN START ADDRESS (DISP)  
GPR10 SORT BIN BASE ADDRESS  
GPR11 NEW DSCRPTR TABLE PAGE ADDRESS  
FPR0 ORMA FOR INTERRUPT ROUTINES  
FPR1 DELETE ROUTINES WORK REG  
FPR2 INSERT SYMBOL COUNT (BYTES)  
FPR3 NRMA FOR INTERRUPT ROUTINES.  
FPR4 CONSTANT (00000004)  
FPR5 ORIGINAL HISTORY BYTE COUNT  
FPR6 MULT INT IND, ORIG C/C BYTE CNT  
FPR7 NOT USED

UP TO THIS POINT ONLY DESCRIPTORS  
HAVE BEEN MOVED. IT IS NECESSARY NOW  
TO MOVE THE SYMBOL DATA FROM OLD  
REFRESH TO NEW REFRESH. THE FIRST  
FUNCTION PERFORMED ON THIS PAGE WILL  
BE TO DETERMINE WHETHER THERE ARE  
ANY SYMBOLS TO BE MOVED. IF NOT  
THEN BRANCH TO INSERT NEW SYMBOLS  
ROUTINE. IF THERE ARE SYMBOLS TO BE  
MOVED THEN GO TO PAGE QQ491 WHERE  
THE ACTUAL MOVE OF HISTORY AND  
CURRENT SYMBOLS FROM OLD REFRESH TO  
NEW REFRESH TAKES PLACE.





# RPSB LOCAL STORAGE REGISTER ASSIGNMENTS.

GPR0	HISTORY SYMBOL COUNT
GPR1	CURRENT SYMBOL COUNT
GPR2	OLD DESCRIPTOR TABLE ADDRESS
GPR3	NEW DESCRIPTOR TABLE ADDRESS
GPR4	OLD REFRESH MEMORY ADDRESS
GPR5	NEW REFRESH MEMORY ADDRESS
GPR6	NEXT SORT BIN ADDRESS
GPR7	WORK CONTROL TABLE ADDRESS
GPR8	STATUS CODE (BITS 0-3) IRTX CODE (BITS 4-7) 2XBIN NO. (27-31)
GPR9	SORT BIN START ADDRESS (DISP)
GPR10	SORT BIN BASE ADDRESS
GPR11	NEW DSCRPTR TABLE PAGE ADDRESS
FPR0	ORMA FOR INTERRUPT ROUTINES
FPR1	DELETE ROUTINES WORK REG
FPR2	INSERT SYMBOL COUNT (BYTES)
FPR3	NRMA FOR INTERRUPT ROUTINES.
FPR4	CONSTANT (00000004)
FPR5	ORIGINAL HISTORY BYTE COUNT
FPR6	MULT INT IND. ORIG C/C BYTE CNT
FPR7	NOT USED

DURING THIS ROUTINE THE DESIGNATED NUMBER OF SYMBOLS AS PER HISTORY COUNT (2 PER DOUBLE WORD) ARE MOVED FROM OLD REFRESH TO NEW REFRESH. AS EACH SYMBOLS IS MOVED, THE BRIGHTNESS BIT FOR EACH SYMBOL IS RESET. AFTER COMPLETION OF THIS MOVE, THE ROUT WILL CONTINUE ON TO PROCESS CURRENT SYMBOLS. IF THE DELETE OPERATION HAS LEFT THE FIRST HISTORY SYMBOL TO BE MOVED ON AN ODD BOUNDARY, THE ROUT WILL TRANSFER THE FIRST SYMBOL AND ASSOCIATED CONTROL BITS FROM WD 2 TO WD 1. THE P2 BIT WILL BE RESET TO PREVENT THE DISPLAY OF WD 2. ALL THE REMAINING SYM WILL BE TRANSFERRED AS GIVEN EXCEPT THE BRIGHTNESS BITS WILL BE RESET. THE MOVING OF CURR SYM WILL NOT REQUIRE THE RESET OF THE BRIGHTNESS BITS.

713671

04/28/70

MACH  
NAME  
MODE  
P.N.

C7201-02  
MANUAL  
2583867

DATE 05/21/70  
LOG 048

SHEET 1 Q0491  
VERSION

REPACK SYMBOLS-MOVE OLD  
REPACK FROM OLD TO NEW REFRESH MEM



QQ211.CIE  
(1X)CSS NON-  
PROGRAMME  
INTERRUPT.

QQ541.NIE  
(XX)DE+DE  
SE+DE INTRPTS

QQ461.CFE  
(XX)INVALID  
WCT SEQUENCE.

QQ471.EIE  
(XX)INVALID  
WCT SEQUENCE.

QQ291.NGE  
(XX)CVWL NON-  
PRG INTRPT

QQ531.NCE  
(X1)INTERRUPT  
PENDING AT  
END OF INSERT  
DESCRIPTORS  
ROUTINE.  
IRXT CODE 0001

QQ431.CBE  
(X1)INTERRUPT  
PENDING AT END  
OF MOVE HIS-  
TORY DESCRIP-  
TORS ROUTINE.  
IRXT CODE 0010

QQ411.QCE  
(X1)INTERRUPT  
PENDING AT END  
OF DELETE  
DESCRIPTORS  
ROUTINE.  
IRXT CODE 0001

QQ441.CDE  
(X1)INTPT AT  
END OF MODIFY  
DESCRIPTORS.

QQ401.LFE  
(XX)SPEC CHECK

QQ521.QGE  
(XX)EDCT

QQ531.LHE  
(XX)SPEC CHECK

QQ461.EBE  
(X1)INTERRUPT

PENDING AT END

OF MOVE CUR-

RENT DESCRIP-

TORS ROUTINE.  
IRXT CODE 0110

#### RPSB LOCAL STORAGE REGISTER ASSIGNMENTS.

GPR0 HISTORY SYMBOL COUNT  
GPR1 CURRENT SYMBOL COUNT  
GPR2 OLD DESCRIPTOR TABLE ADDRESS  
GPR3 NEW DESCRIPTOR TABLE ADDRESS  
GPR4 OLD REFRESH MEMORY ADDRESS  
GPR5 NEW REFRESH MEMORY ADDRESS  
GPR6 NEXT SORT BIN ADDRESS  
GPR7 WORK CONTROL TABLE ADDRESS  
GPR8 STATUS CODE (BITS 0-3) IRXT CODE  
(BITS 4-7) 2XBIN NO. (27-31)  
GPR9 SORT BIN START ADDRESS (DISP)  
GPR10 SORT BIN BASE ADDRESS  
GPR11 NEW DSCRPTR TABLE PAGE ADDRESS  
FPR0 ORMA FOR INTERRUPT ROUTINES  
FPR1 DELETE ROUTINES WORK REG  
FPR2 INSERT SYMBOL COUNT (BYTES)  
FPR3 NRMA FOR INTERRUPT ROUTINES.  
FPR4 CONSTANT (00000004)  
FPR5 ORIGINAL HISTORY BYTE COUNT  
FPR6 MULT INT IND. ORIG C/C BYTE CNT  
FPR7 NOT USED

A 0+K  
A +T  
B 0+10+V0  
B V+0  
B +FO  
L WGP1  
S STOP1  
C 0+STC

IRXT CODE 0110 TO FO.

SAVE CURRENT

SYMBOL COUNT.

Q2 XX QB

ADJUST HISTORY

SYMBOL COUNT TO

BYTE COUNT AND

SAVE IN GPR0.

Q3 XX QC

Q4 XX QD

Q5 XX QE

Q6 XX QF

Q7 XX QG

Q8 XX QH

Q9 XX QI

Q10 XX QJ

Q11 XX QK

Q12 XX QL

Q13 XX QM

Q14 XX QN

Q15 XX QO

Q16 XX QP

Q17 XX QQ

Q18 XX QR

Q19 XX QS

Q20 XX QT

Q21 XX QU

Q22 XX QV

Q23 XX QW

Q24 XX QX

Q25 XX QY

Q26 XX QZ

Q27 XX QA

Q28 XX QB

Q29 XX QC

Q30 XX QD

Q31 XX QE

Q32 XX QF

Q33 XX QG

Q34 XX QH

Q35 XX QI

Q36 XX QJ

Q37 XX QK

Q38 XX QL

Q39 XX QM

Q40 XX QN

Q41 XX QO

Q42 XX QP

Q43 XX QQ

Q44 XX QR

Q45 XX QS

Q46 XX QT

Q47 XX QU

Q48 XX QV

Q49 XX QW

Q50 XX QX

Q51 XX QY

Q52 XX QZ

Q53 XX QA

Q54 XX QB

Q55 XX QC

Q56 XX QD

Q57 XX QE

Q58 XX QF

Q59 XX QG

Q60 XX QH

Q61 XX QI

Q62 XX QJ

Q63 XX QK

Q64 XX QL

Q65 XX QM

Q66 XX QN

Q67 XX QO

Q68 XX QP

Q69 XX QQ

Q70 XX QR

Q71 XX QS

Q72 XX QT

Q73 XX QU

Q74 XX QV

Q75 XX QW

Q76 XX QX

Q77 XX QY

Q78 XX QZ

Q79 XX QA

Q80 XX QB

Q81 XX QC

Q82 XX QD

Q83 XX QE

Q84 XX QF

Q85 XX QG

Q86 XX QH

Q87 XX QI

Q88 XX QJ

Q89 XX QK

Q90 XX QL

Q91 XX QM

Q92 XX QN

Q93 XX QO

Q94 XX QP

Q95 XX QQ

Q96 XX QR

Q97 XX QS

Q98 XX QT

Q99 XX QU

Q100 XX QV

Q101 XX QW

Q102 XX QX

Q103 XX QY

Q104 XX QZ

Q105 XX QA

Q106 XX QB

Q107 XX QC

Q108 XX QD

Q109 XX QE

Q110 XX QF

Q111 XX QG

Q112 XX QH

Q113 XX QI

Q114 XX QJ

Q115 XX QK

Q116 XX QL

Q117 XX QM

Q118 XX QN

Q119 XX QO

Q120 XX QP

Q121 XX QQ

Q122 XX QR

Q123 XX QS

Q124 XX QT

Q125 XX QU

Q126 XX QV

Q127 XX QW

Q128 XX QX

Q129 XX QY

Q130 XX QZ

Q131 XX QA

Q132 XX QB

Q133 XX QC

Q134 XX QD

Q135 XX QE

Q136 XX QF

Q137 XX QG

Q138 XX QH

Q139 XX QI

Q140 XX QJ

Q141 XX QK

Q142 XX QL

Q143 XX QM

Q144 XX QN

Q145 XX QO

Q146 XX QP

Q147 XX QQ

Q148 XX QR

Q149 XX QS

Q150 XX QT

Q151 XX QU

Q152 XX QV

Q153 XX QW

Q154 XX QX

Q155 XX QY

Q156 XX QZ

Q157 XX QA

Q158 XX QB

Q159 XX QC

Q160 XX QD

Q161 XX QE

Q162 XX QF

Q163 XX QG

Q164 XX QH

Q165 XX QI

Q166 XX QJ

Q167 XX QK

Q168 XX QL

Q169 XX QM

Q170 XX QN

Q171 XX QO

Q172 XX QP

Q173 XX QQ

Q174 XX QR

Q175 XX QS

Q176 XX QT

Q177 XX QU

Q178 XX QV

Q179 XX QW

Q180 XX QX

Q181 XX QY

Q182 XX QZ

Q183 XX QA

Q184 XX QB

Q185 XX QC

Q186 XX QD

Q187 XX QE

Q188 XX QF

Q189 XX QG

Q190 XX QH

Q191 XX QI

Q192 XX QJ

Q193 XX QK

Q194 XX QL

Q195 XX QM

Q196 XX QN

Q197 XX QO

Q198 XX QP

Q199 XX QQ

Q200 XX QR

Q201 XX QS

Q202 XX QT

Q203 XX QU

Q204 XX QV

Q205 XX QW

Q206 XX QX

Q207 XX QY

Q208 XX QZ

Q209 XX QA

Q210 XX QB

Q211 XX QC

Q212 XX QD

Q213 XX QE

Q214 XX QF

Q215 XX QG

Q216 XX QH

Q217 XX QI

Q218 XX QJ

Q219 XX QK

Q220 XX QL

Q221 XX QM

Q222 XX QN

Q223 XX QO

Q224 XX QP

Q225 XX QQ

Q226 XX QR

Q227 XX QS

Q228 XX QT

Q229 XX QU

Q230 XX QV

Q231 XX QW

Q232 XX QX

Q233 XX QY

Q234 XX QZ

Q235 XX QA

Q236 XX QB

Q237 XX QC

Q238 XX QD

Q239 XX QE

Q240 XX QF

Q241 XX QG

Q242 XX QH

Q243 XX QI

Q244 XX QJ

Q245 XX QK

Q246 XX QL

Q247 XX QM

Q248 XX QN

Q249 XX QO

Q250 XX QP

Q251 XX QQ

Q252 XX QR

Q253 XX QS

Q254 XX QT

Q255 XX QU

Q256 XX QV

Q257 XX QW

Q258 XX QX

Q259 XX QY

Q260 XX QZ

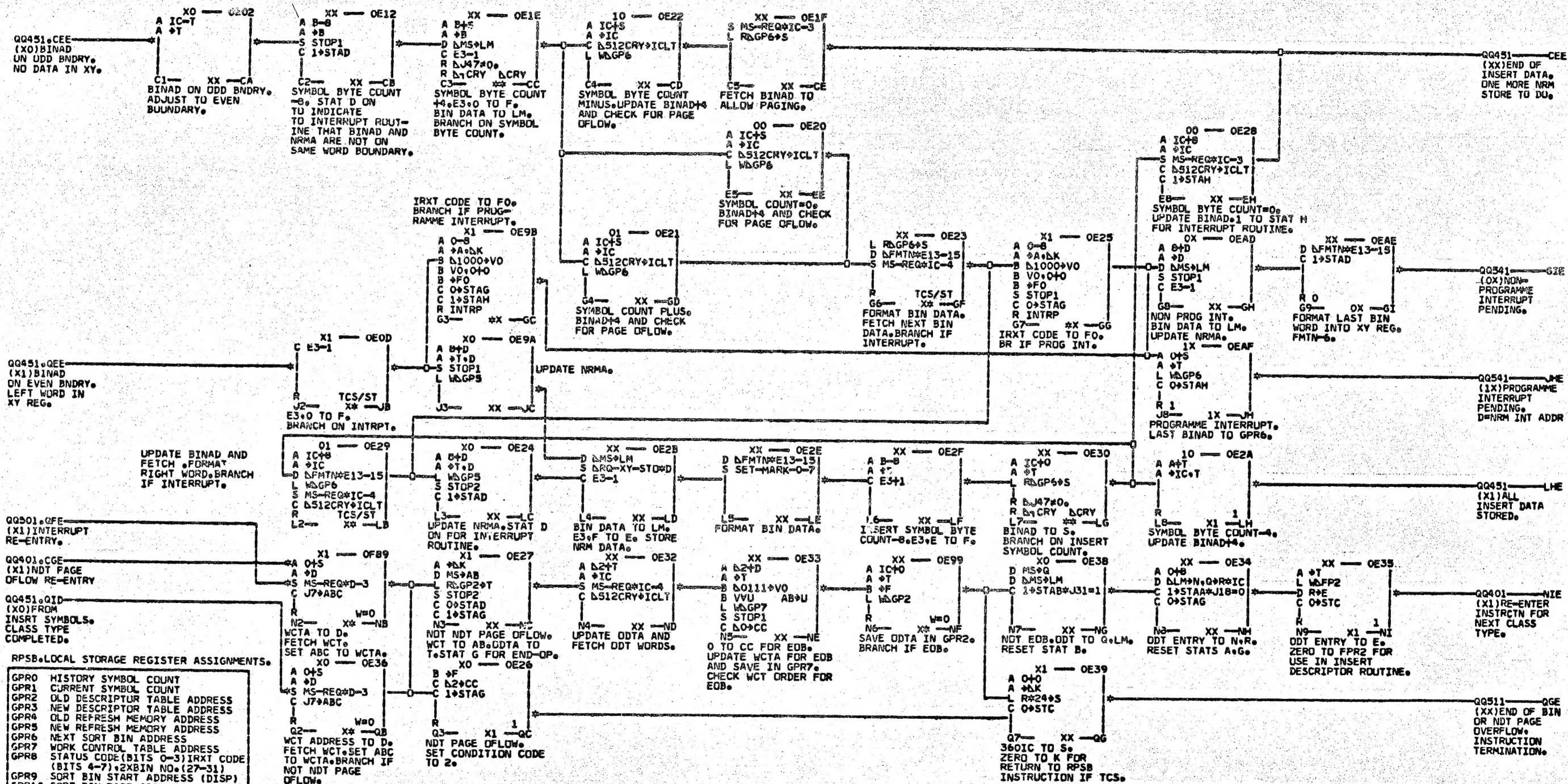
Q261 XX QA

Q262 XX QB

Q263 XX QC

Q264 XX QD



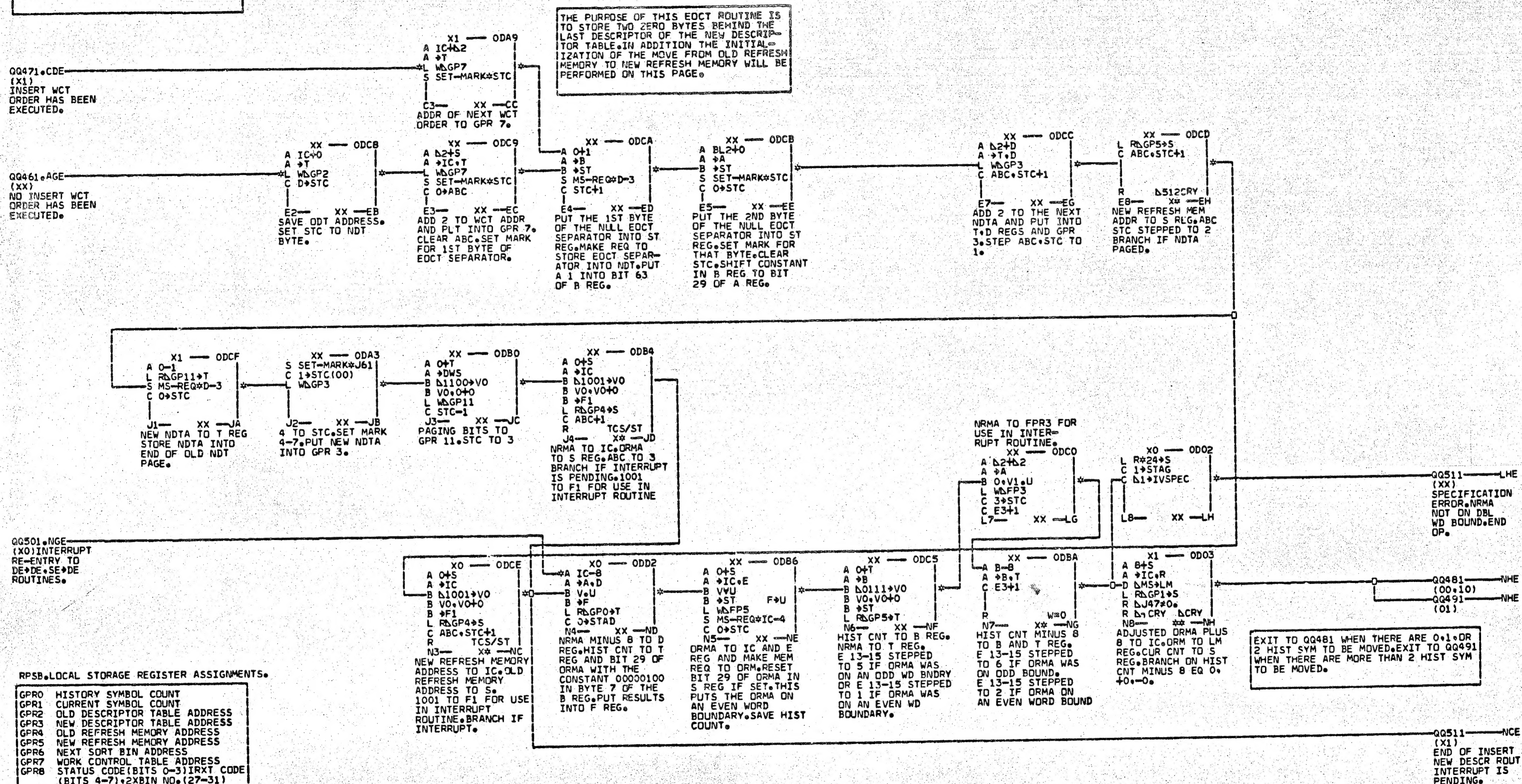


RPSB LOCAL STORAGE REGISTER ASSIGNMENTS.

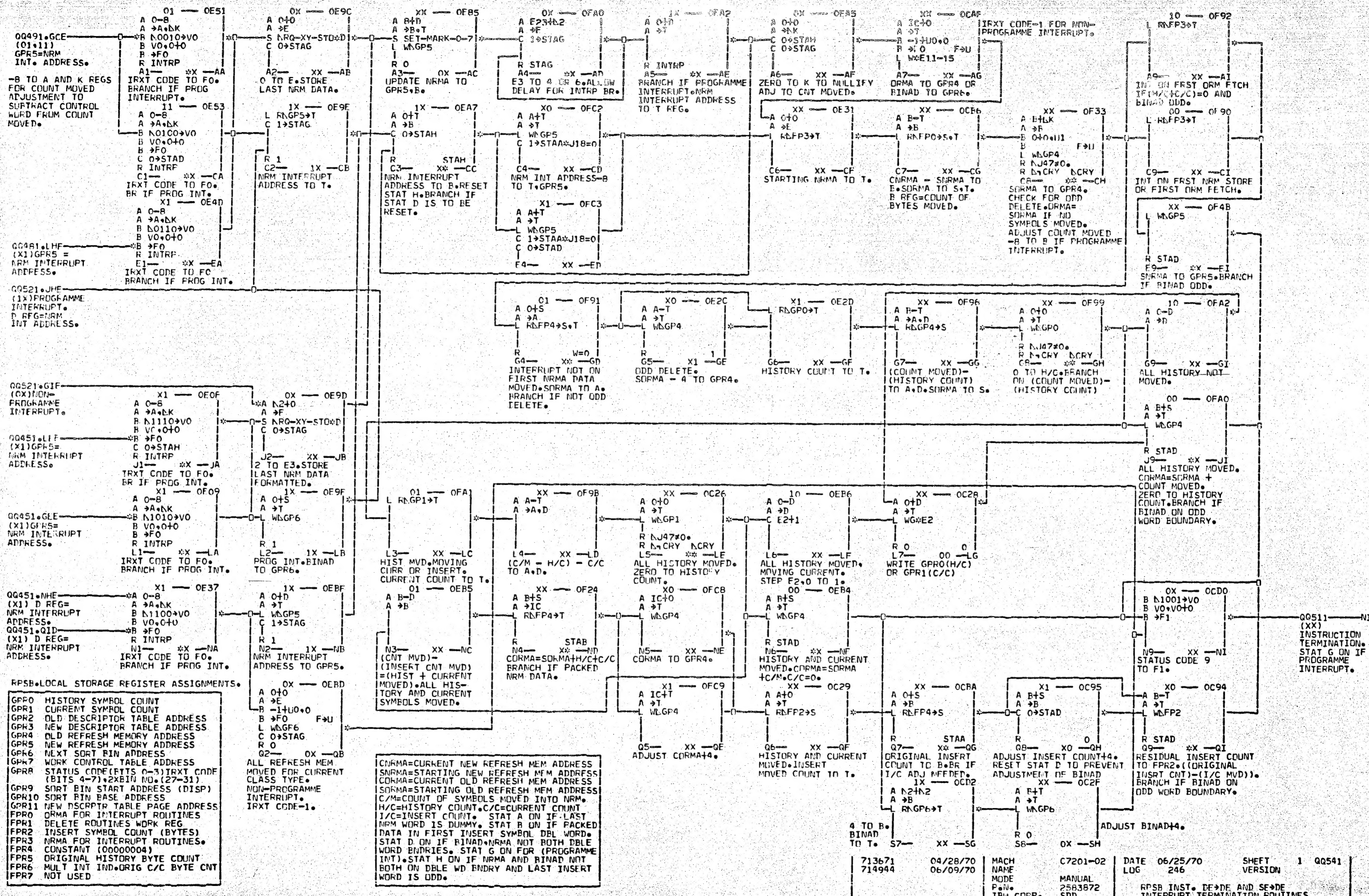
GPR0	HISTORY SYMBOL COUNT
GPR1	CURRENT SYMBOL COUNT
GPR2	OLD DESCRIPTOR TABLE ADDRESS
GPR3	NEW DESCRIPTOR TABLE ADDRESS
GPR4	OLD REFRESH MEMORY ADDRESS
GPR5	NEW REFRESH MEMORY ADDRESS
GPR6	NEXT SORT BIN ADDRESS
GPR7	WORK CONTROL TABLE ADDRESS
GPR8	STATUS CODE (BITS 0-3) IRXT CODE (BITS 4-7) 2XBIN NO. (27-31)
GPR9	SORT BIN START ADDRESS (DISP)
GPR10	SORT BIN BASE ADDRESS
GPR11	NEW DSCRPT TABLE PAGE ADDRESS
FPR0	NRMA FOR INTERRUPT ROUTINES
FPR1	DELETE ROUTINES WORK REG
FPR2	INSERT SYMBOL COUNT (BYTES)
FPR3	NRMA FOR INTERRUPT ROUTINES
FPR4	CONSTANT (00000004)
FPR5	ORIGINAL HISTORY BYTE COUNT
FPR6	MULT INT IND. ORIG C/C BYTE CNT
FPR7	NOT USED



ENTRY INTO THIS PAGE FROM QQ471.CDE  
INDICATES THE PREVIOUS WCT ORDER  
EXECUTED WAS AN INSERT.  
(1)IC=WORK CONT TABLE ADDR.  
(2)D REG=NEW DESC TABLE ADDR.  
(3)K REG=INSERT COUNT.







0  
4  
5  
1